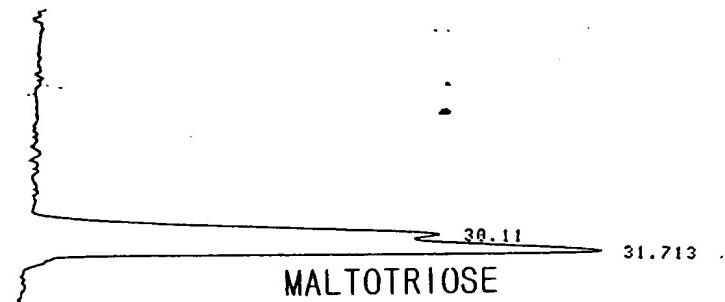


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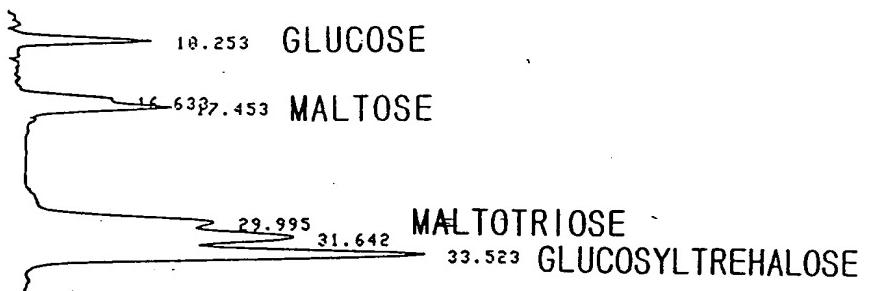
BEFORE REACTION

FIG. 1A

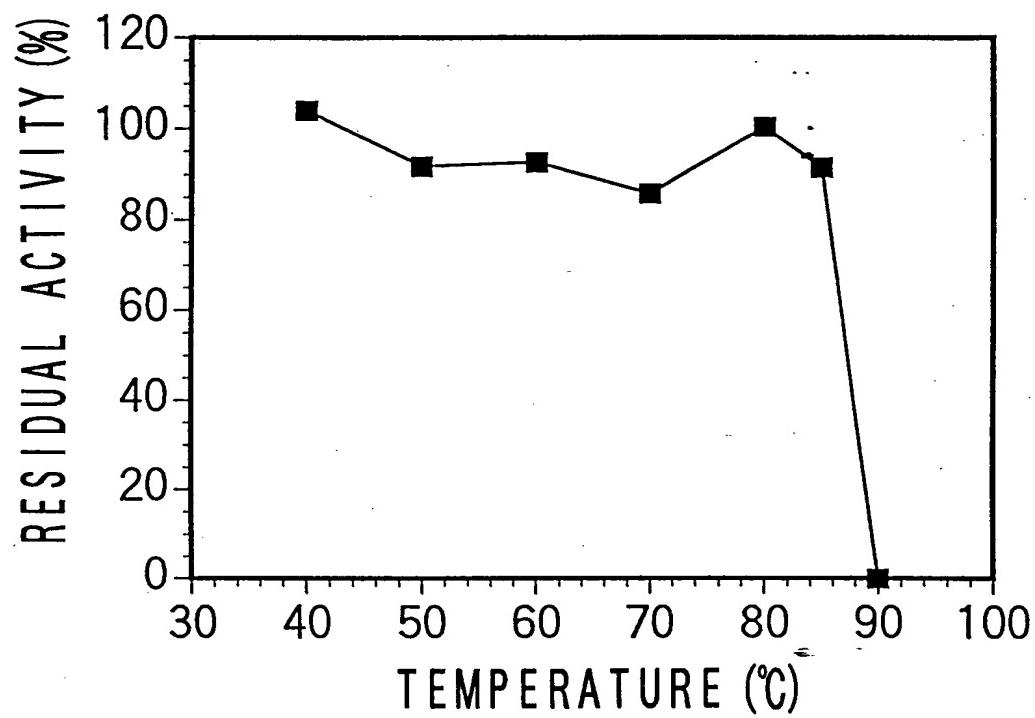


AFTER REACTION

FIG. 1B

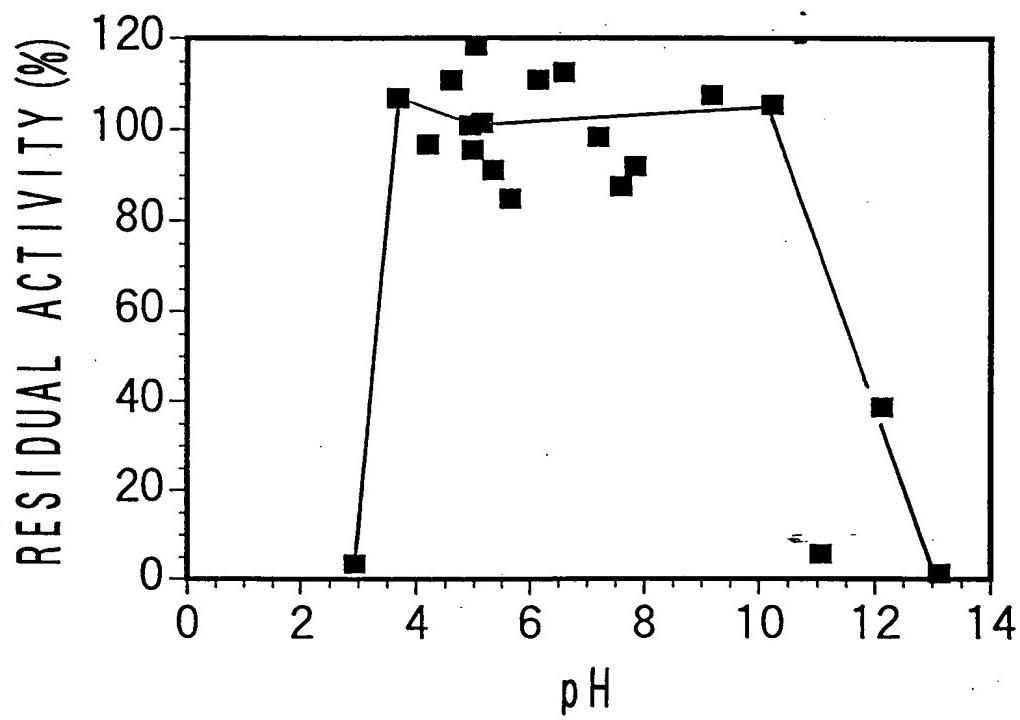


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F I G. 2

3 / 44



F | G. 3

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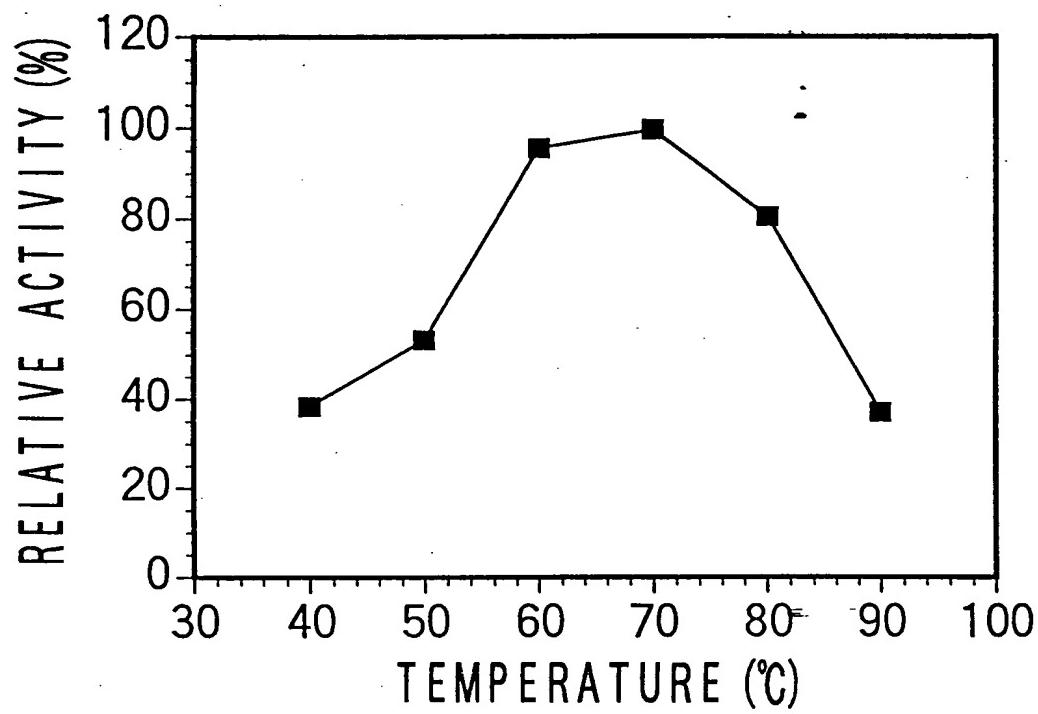


FIG. 4

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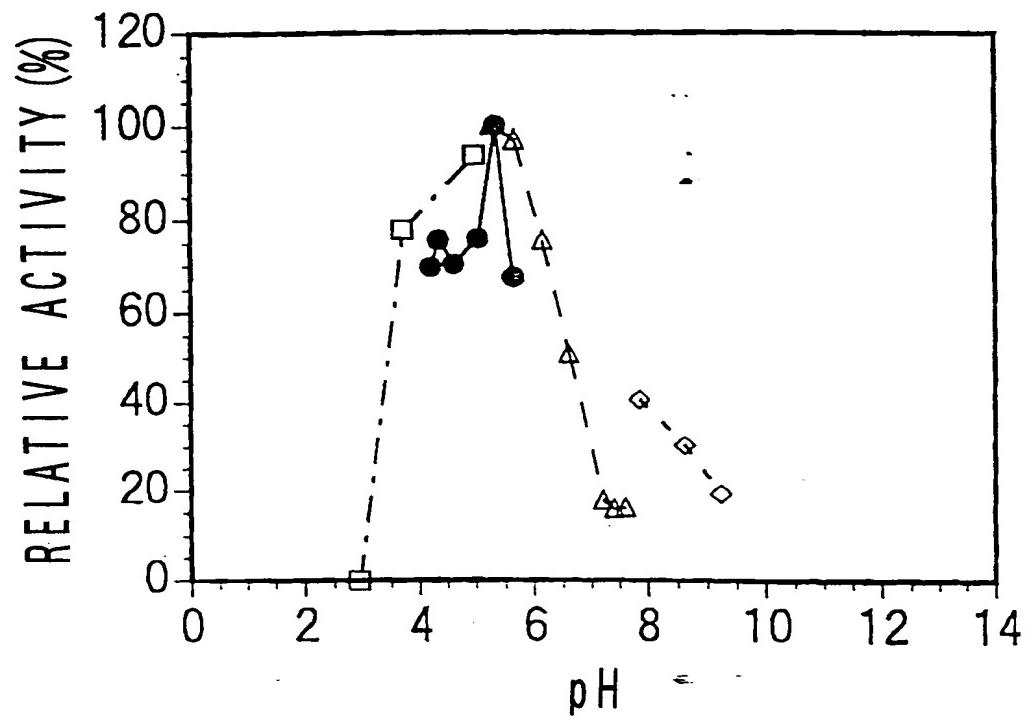
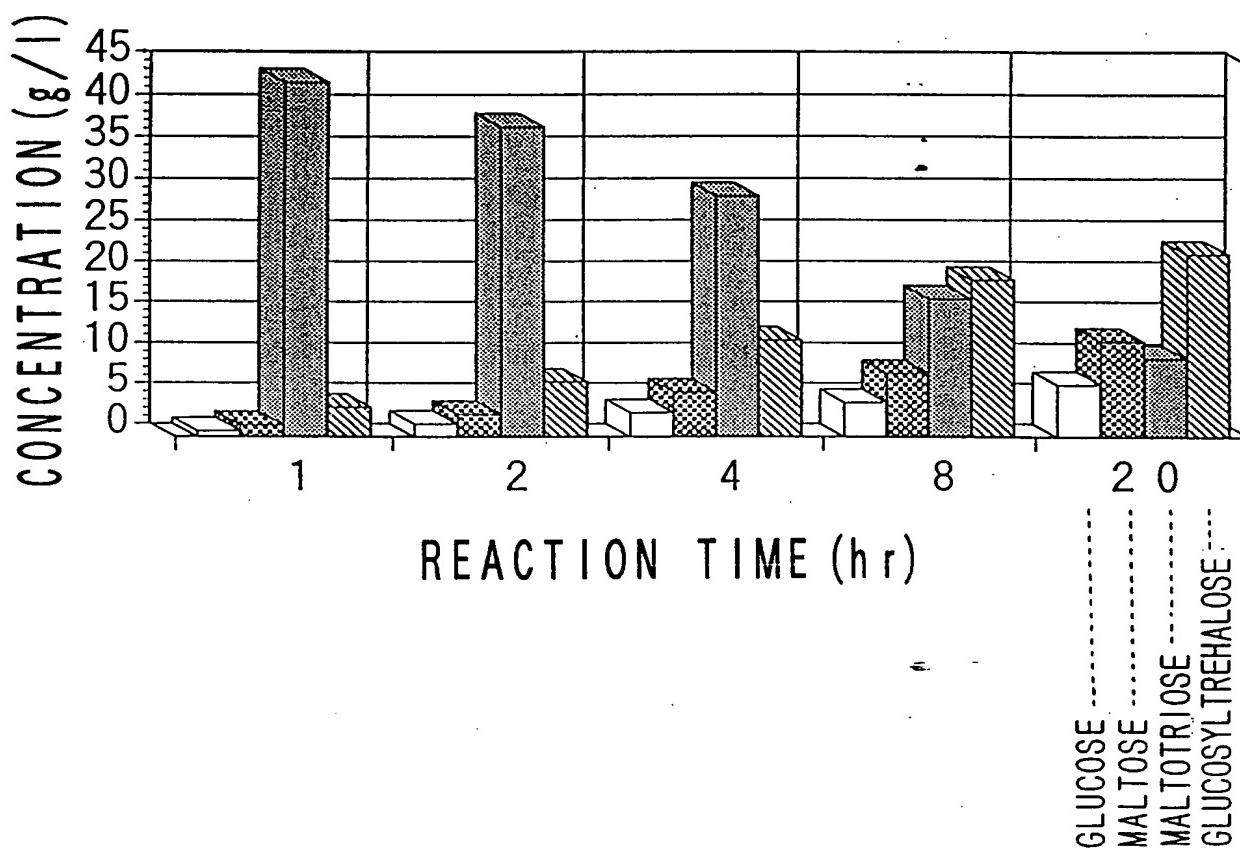


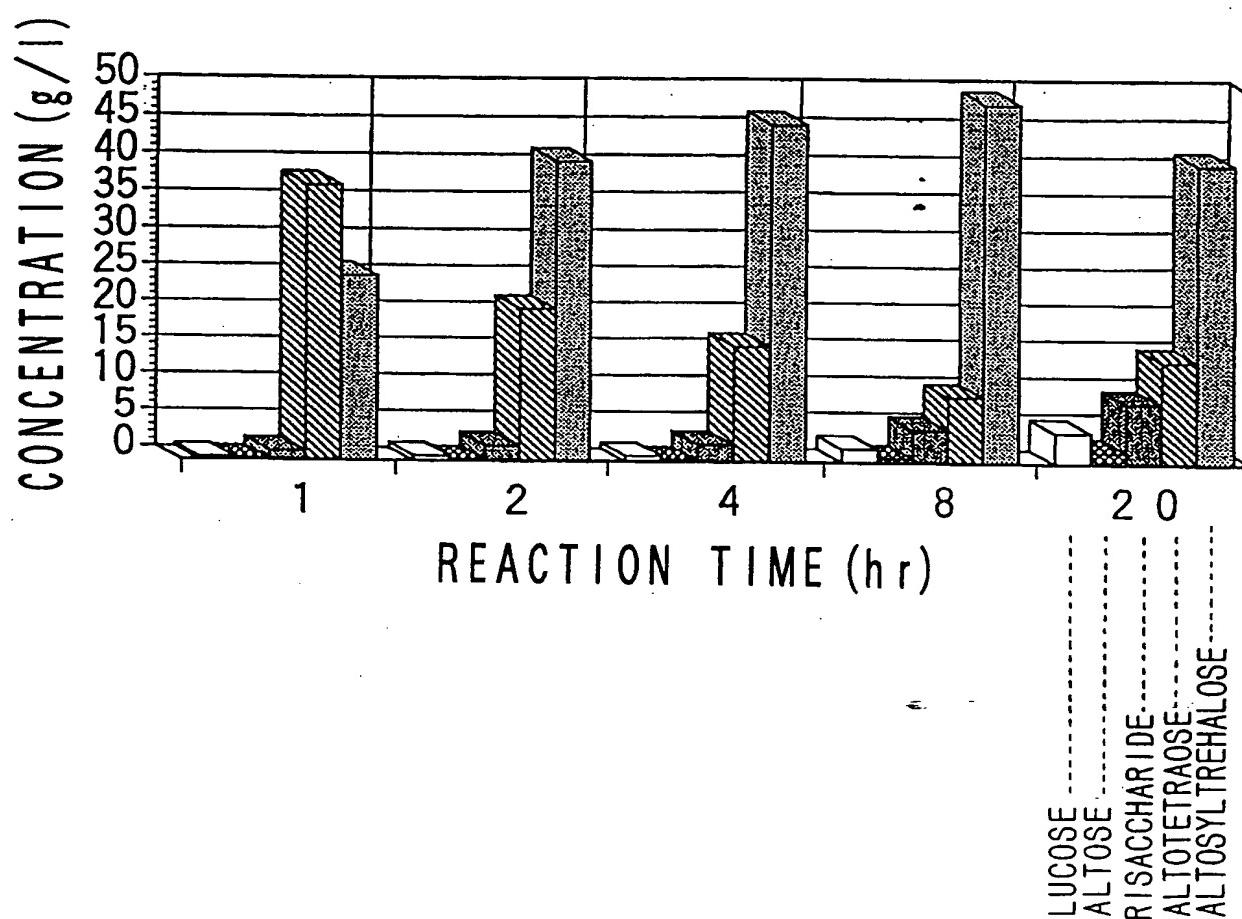
FIG. 5

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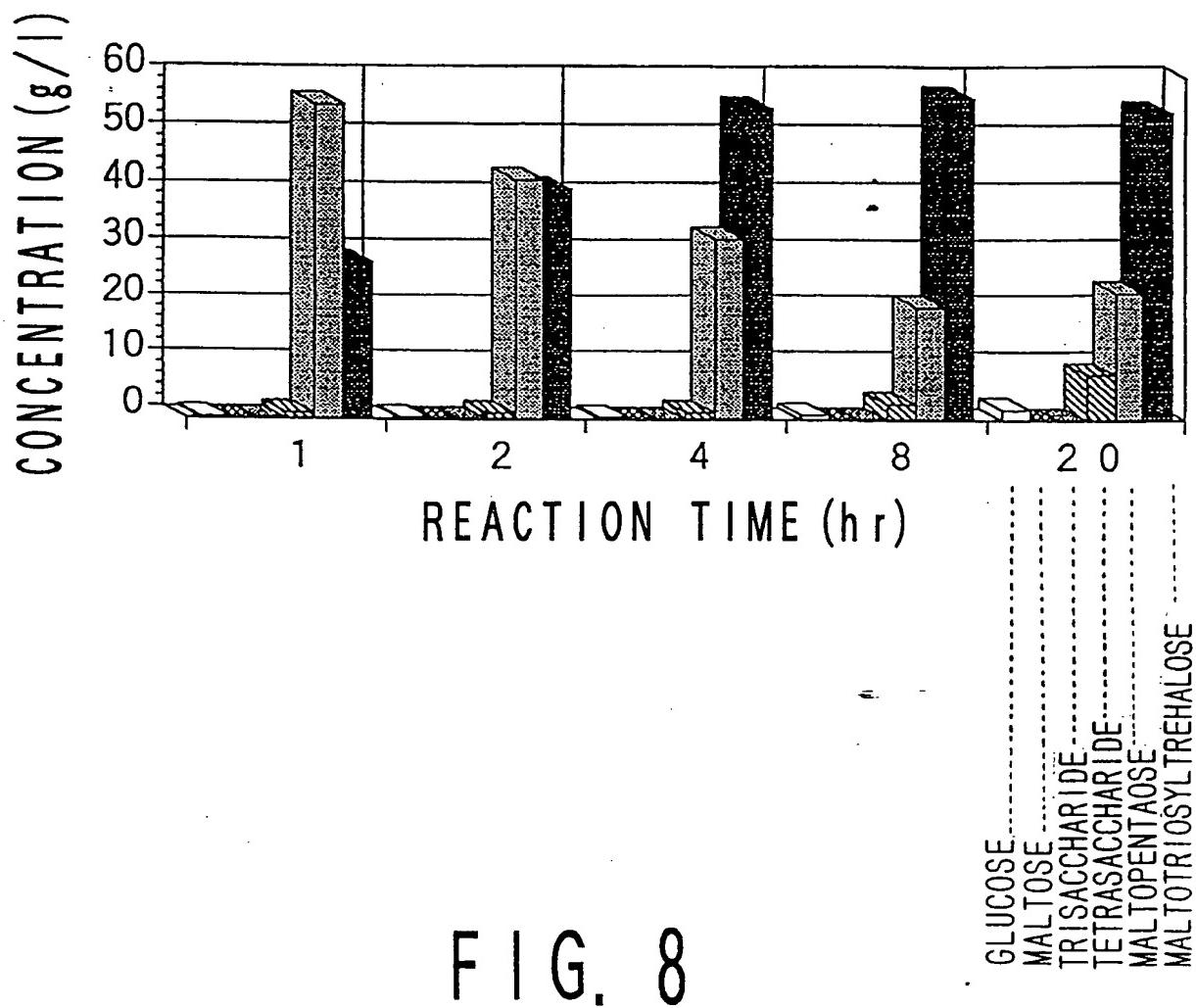
F | G. 6

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F I G. 7

8/44



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REACTION PRODUCT

FIG. 9A

... 8.61 HEPTASACCHARIDE  
... 9.28 HEXASACCHARIDE  
... 10.08 PENTASACCHARIDE  
... 11.12 TETRASACCHARIDE  
... 12.45 TRISACCHARIDE  
... 14.52 DISACCHARIDE  
... 16.64 MONOSACCHARIDE

CONTROL  
(HYDROLYSATE ONLY BY AMYLASE)

FIG. 9B

... 8.91 HEPTASACCHARIDE  
... 9.61 HEXASACCHARIDE  
... 10.53 PENTASACCHARIDE  
... 11.63 TETRASACCHARIDE  
... 12.93 TRISACCHARIDE  
... 14.51 DISACCHARIDE  
... 16.48 MONOSACCHARIDE

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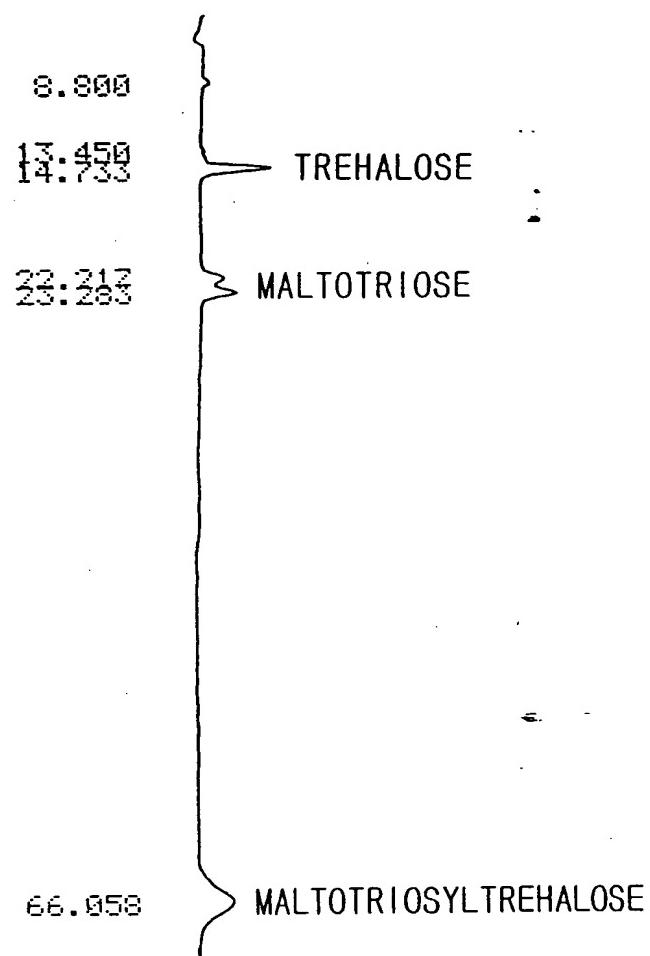


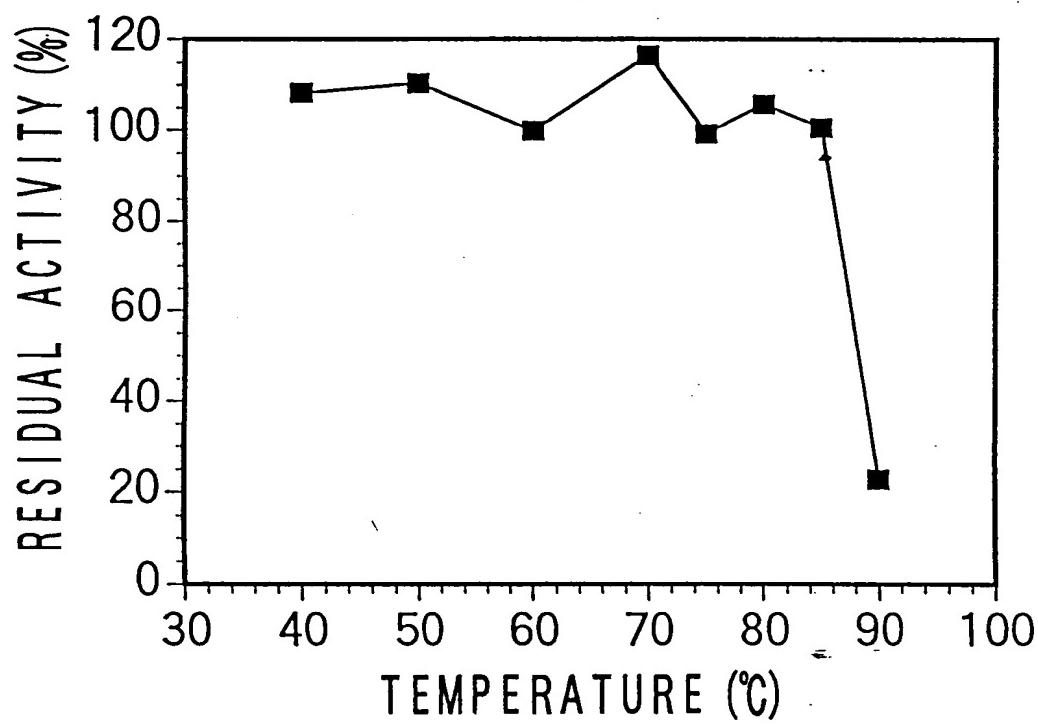
FIG. 10

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FIG. 11

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F | G. 12

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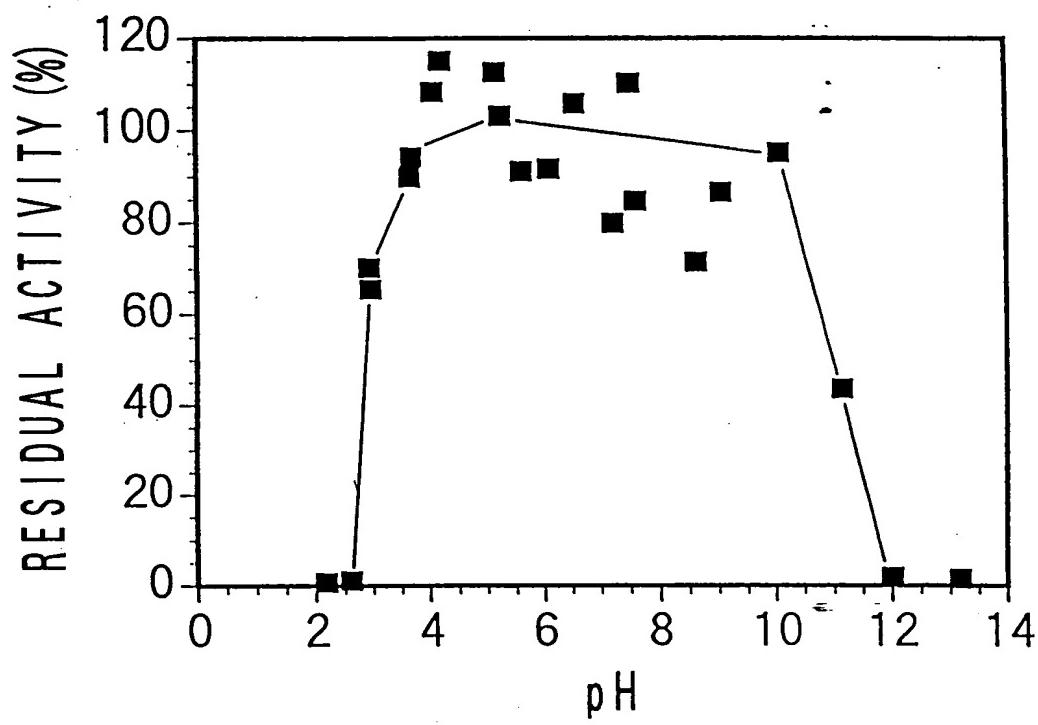
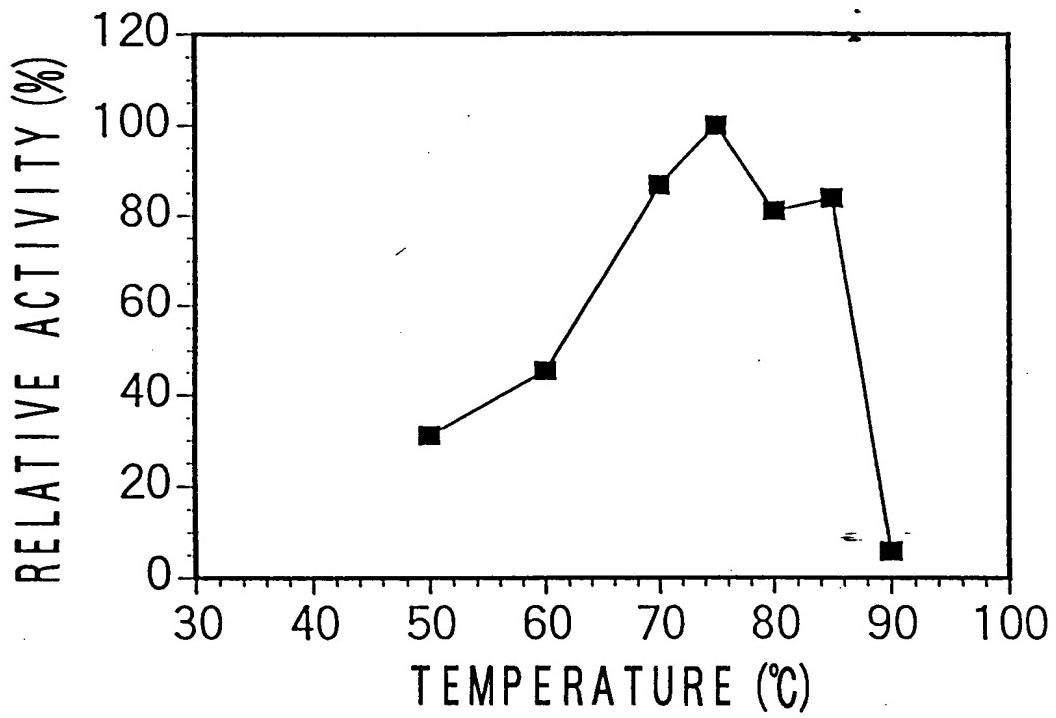


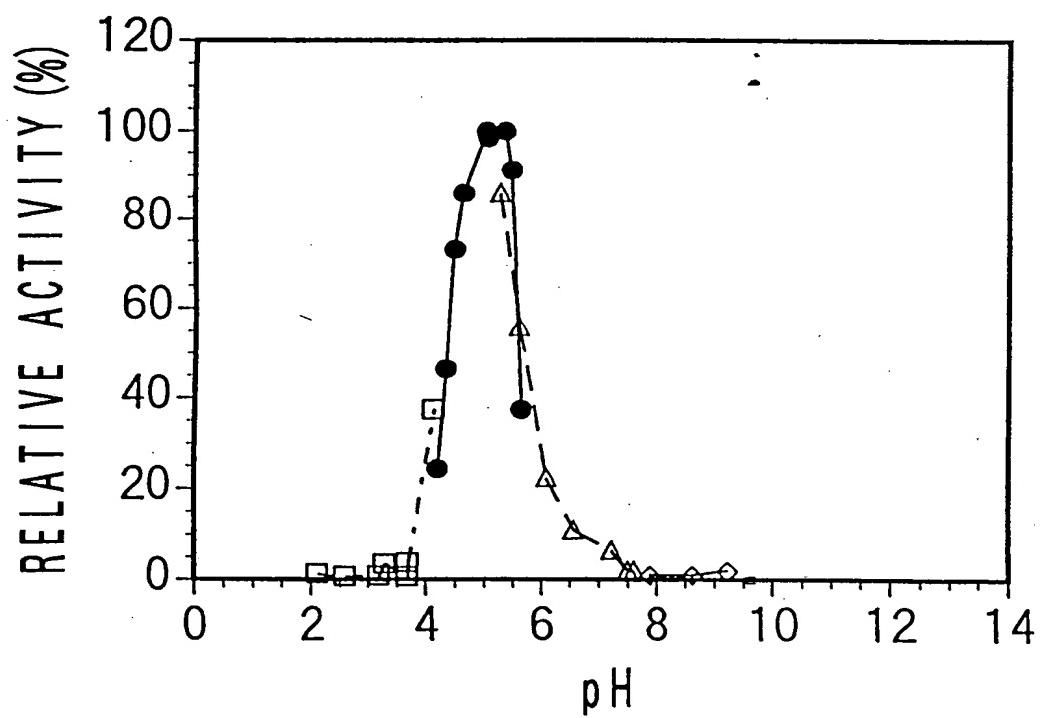
FIG. 13

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F | G. 14

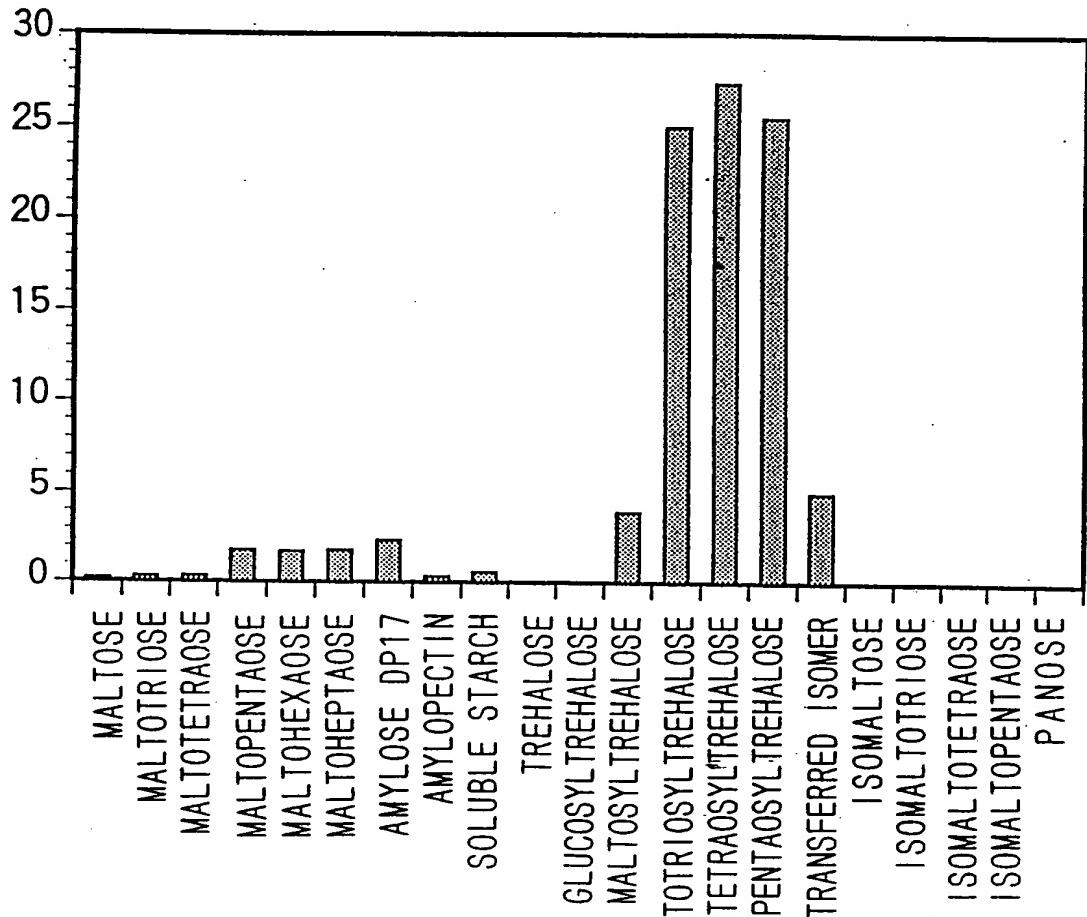
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F | G. 15

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PRODUCTION RATE OF  
MONO-AND DISACCHARIDE (Units/ml)

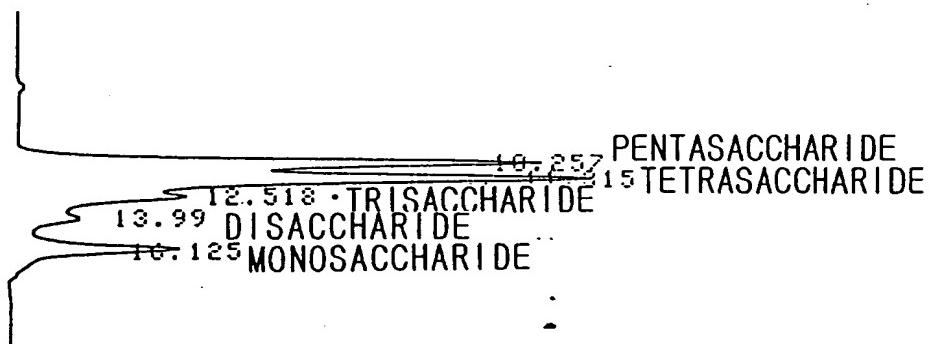


F - G. 16

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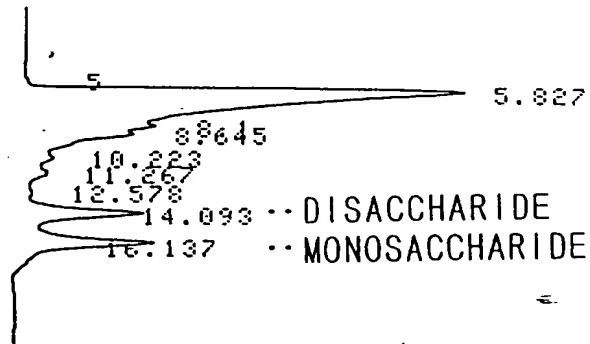
SUBSTRATE: MALTOPENTAOSE

FIG. 17A



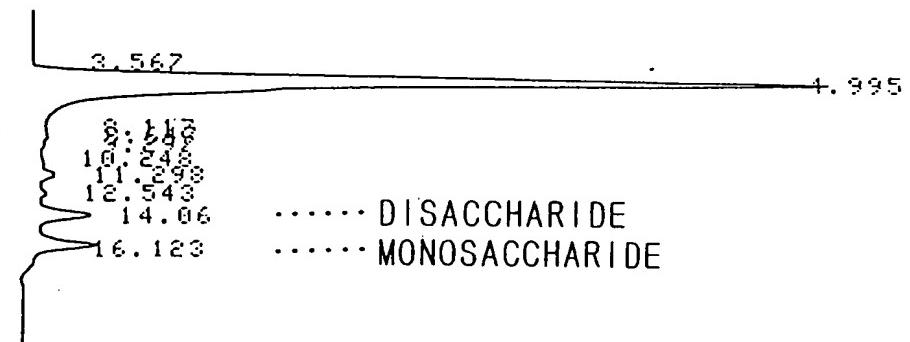
SUBSTRATE: AMYLOSE DP17

FIG. 17B



SUBSTRATE: SOLUBLE STARCH

FIG. 17C



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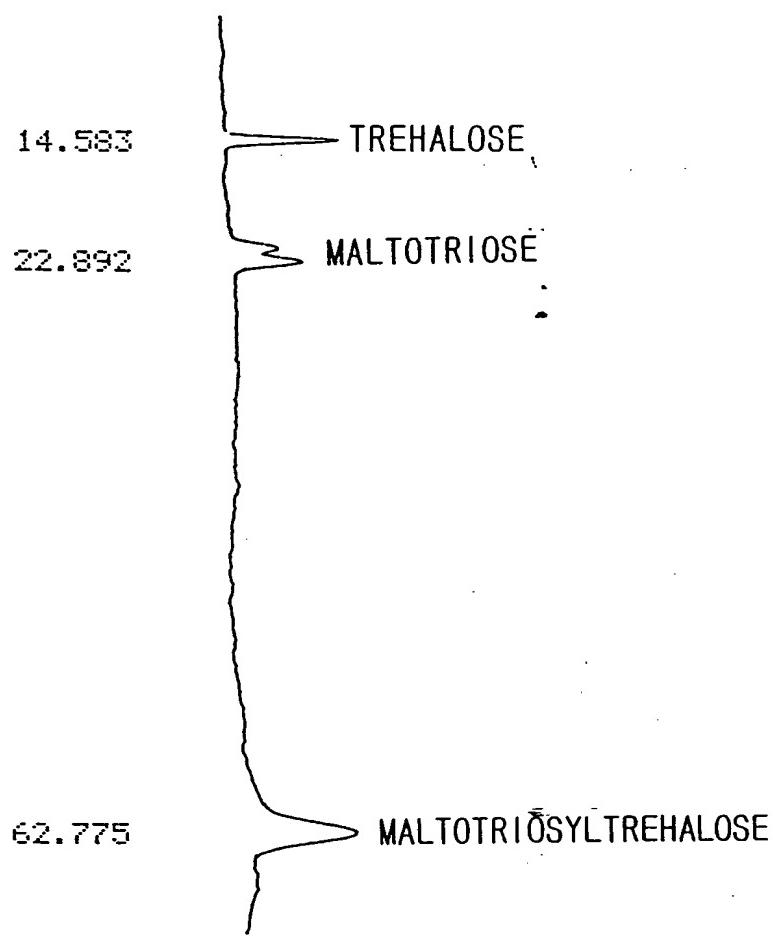


FIG. 18

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14.603

TREHALOSE

59.683  
62.325

MALTOPENTAOSE

MALTOPENTAOSYLTREHALOSE

F I G. 19

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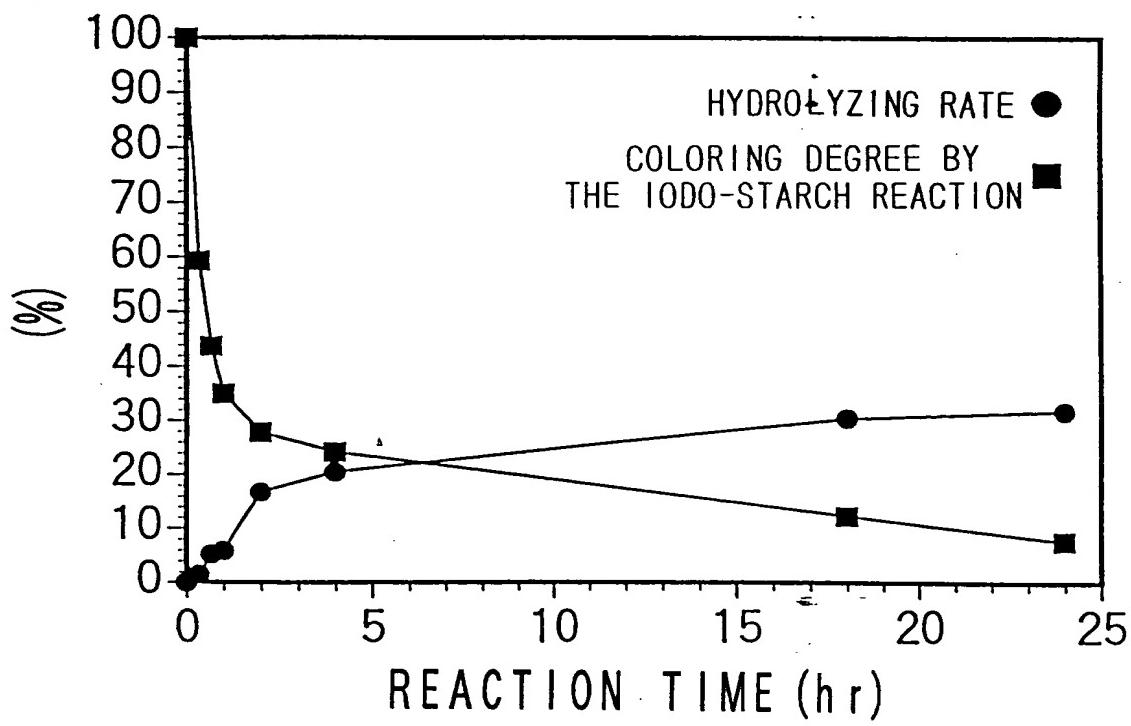


FIG. 20

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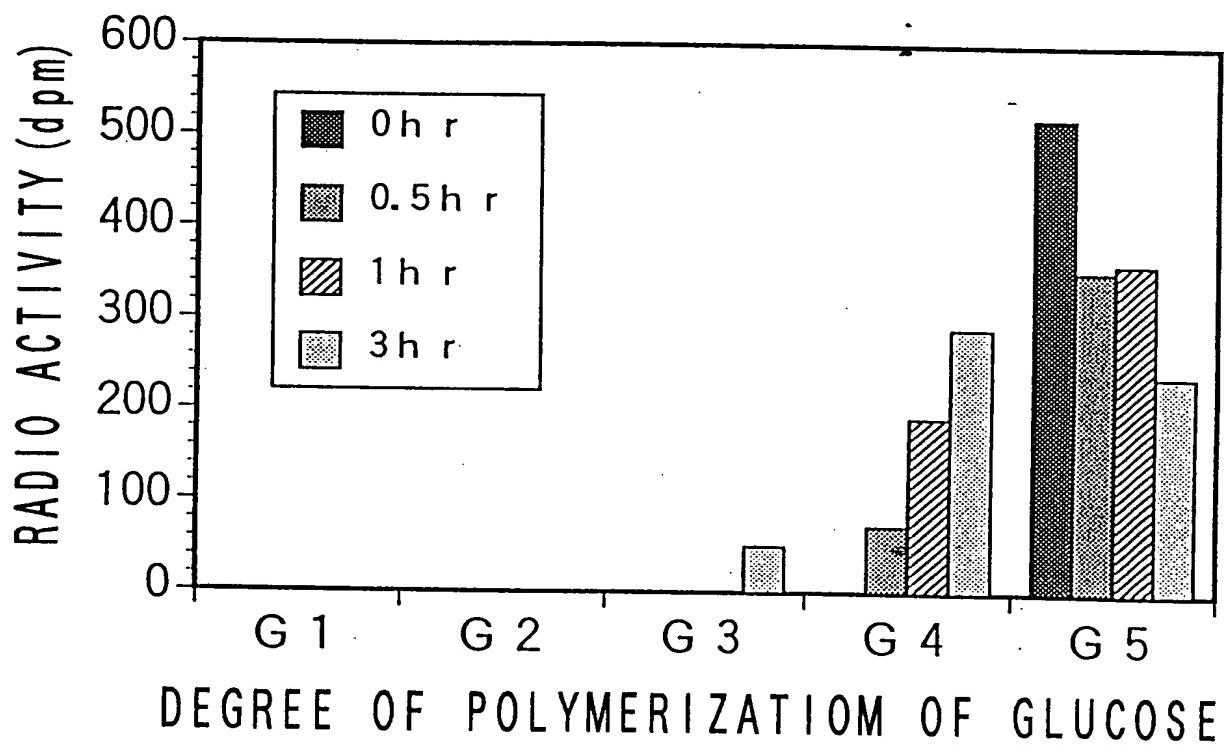


FIG. 21

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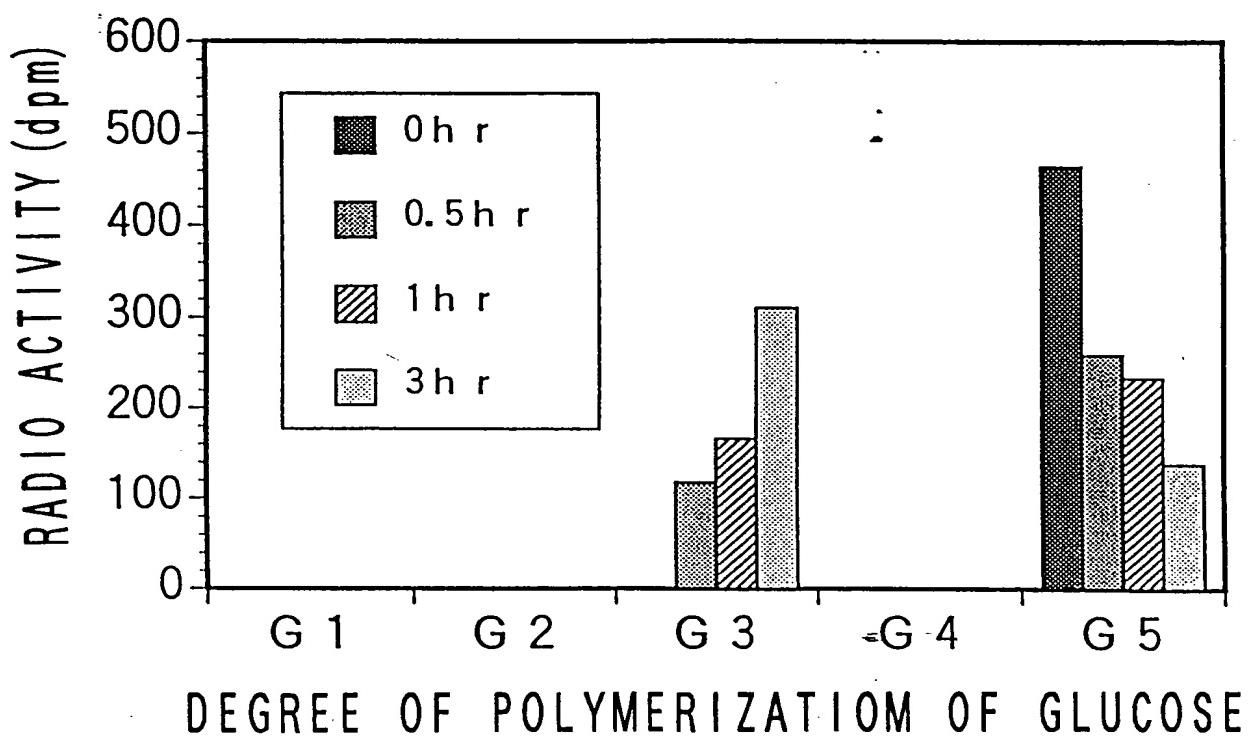
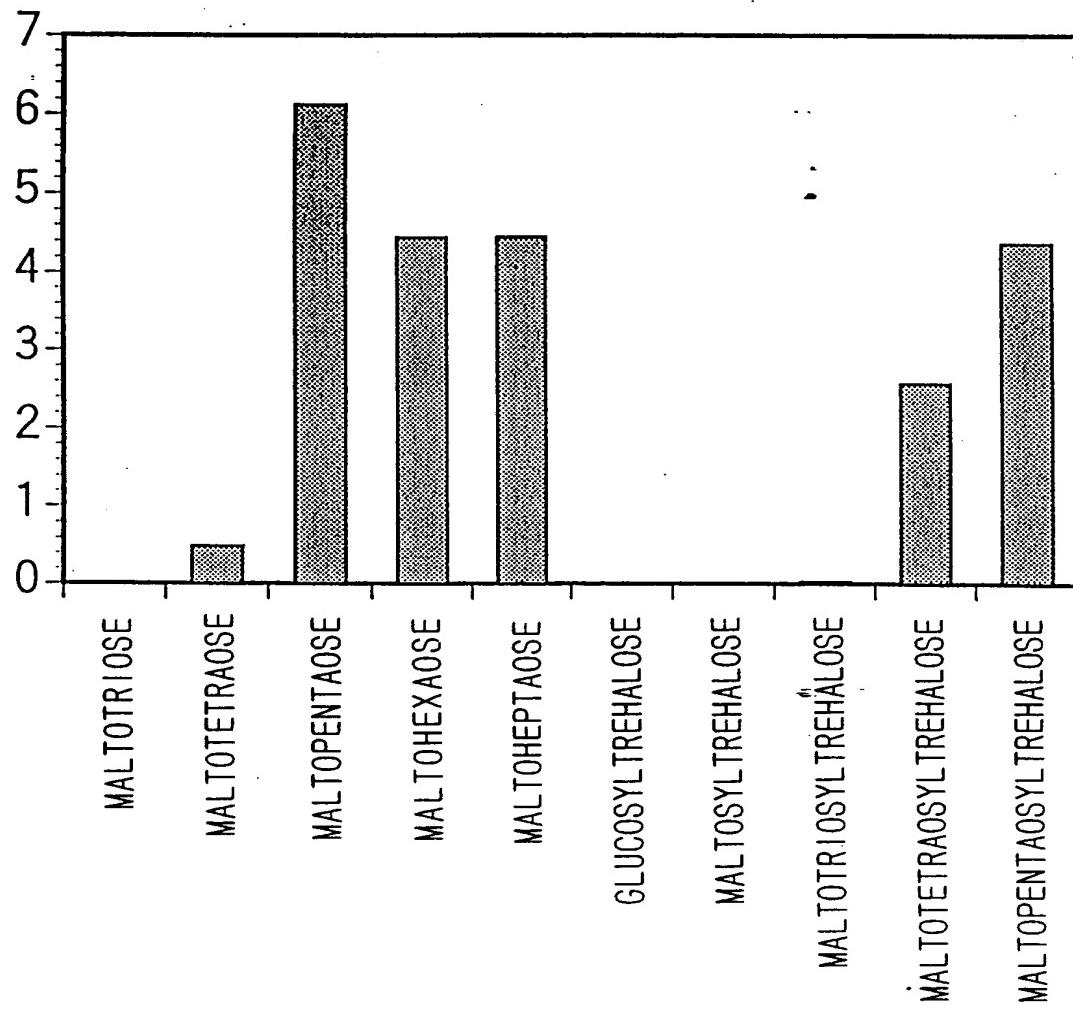


FIG. 22

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PRODUCTION RATE OF  
DI- AND TRISACCHARIDE (Units/ml)



F - G. 23

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13.967

MALTOSE

21.747

MALTOTRIOSE

33.992  
36.025

MALTOSELTREHALOSE

135.975

MALTOPENTAOSYLTREHALOSE

F | G. 24

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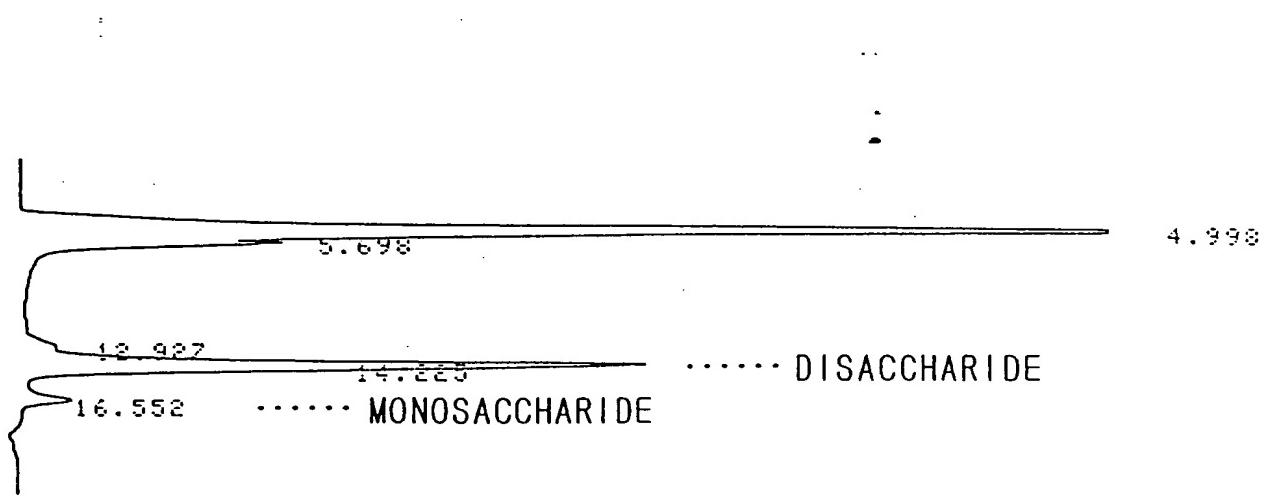
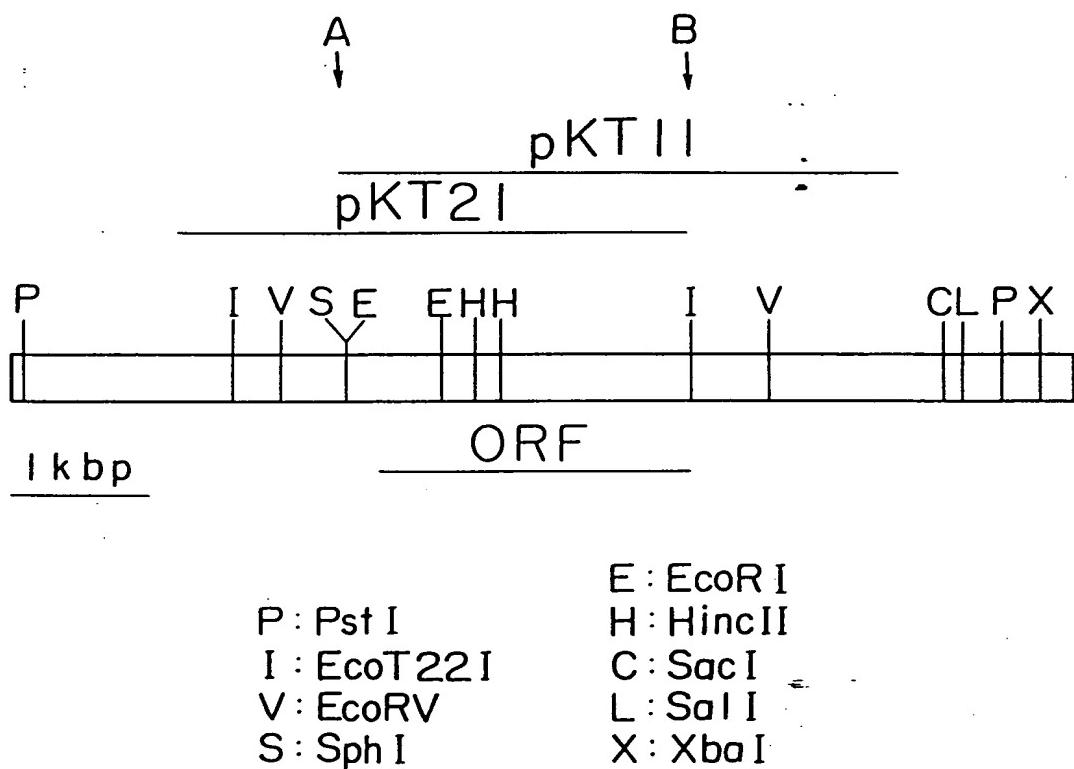


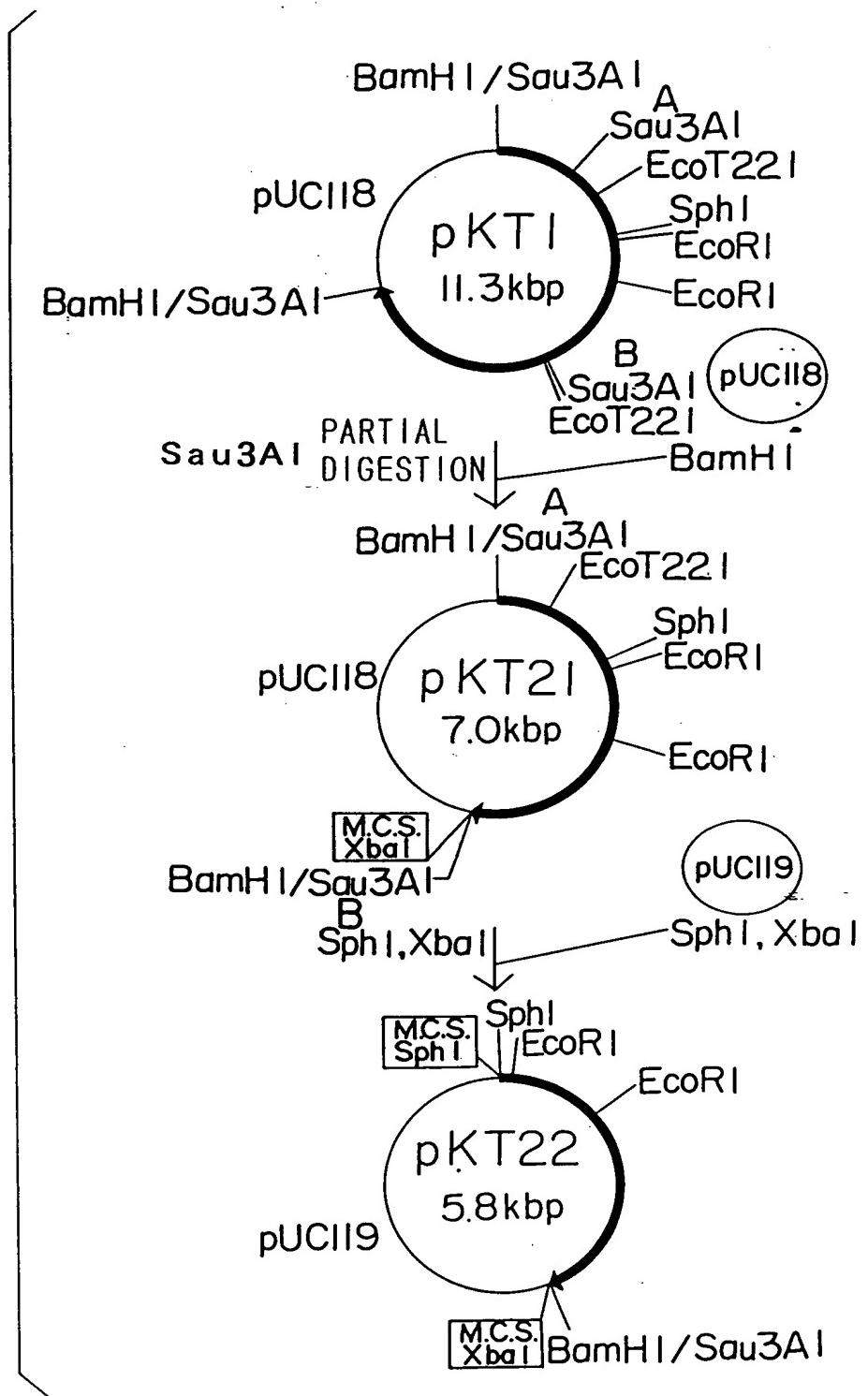
FIG. 25

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F | G. 26

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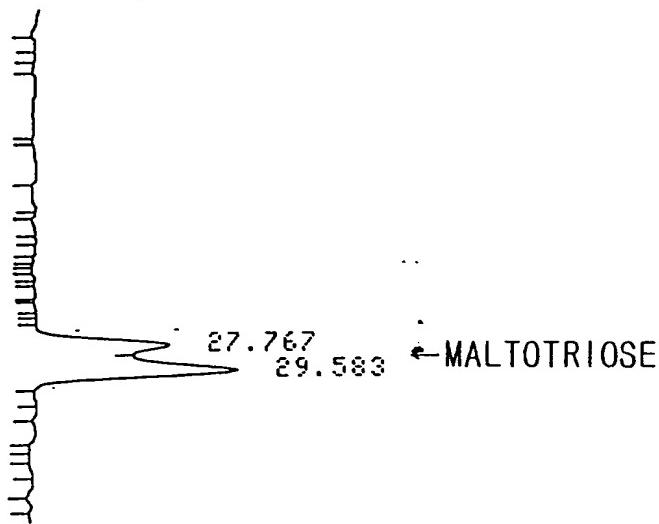


F | G. 27

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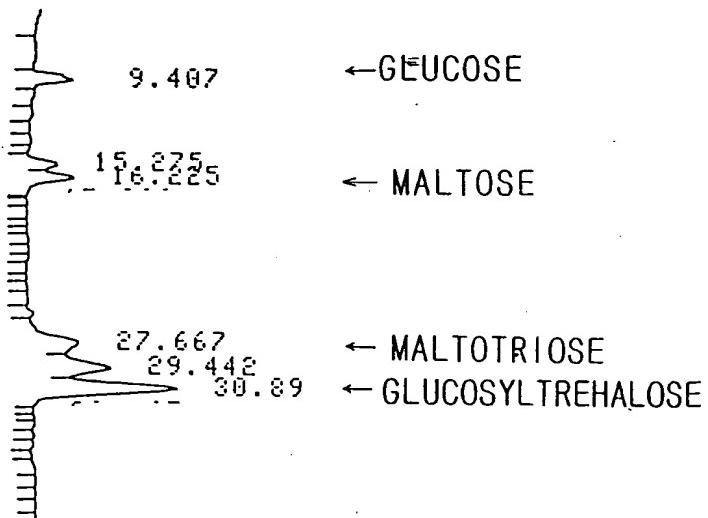
BEFORE ADDITION OF CRUDE ENZYME EXTRACT

FIG. 28A



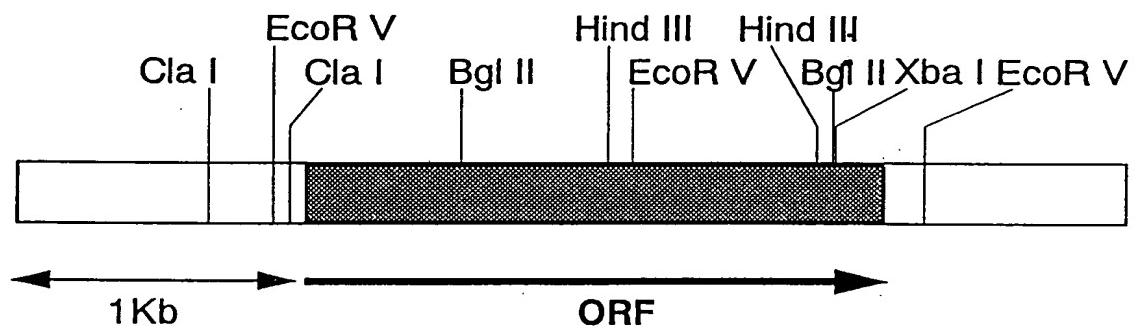
AFTER ADDITION OF CRUDE ENZYME EXTRACT

FIG. 28B



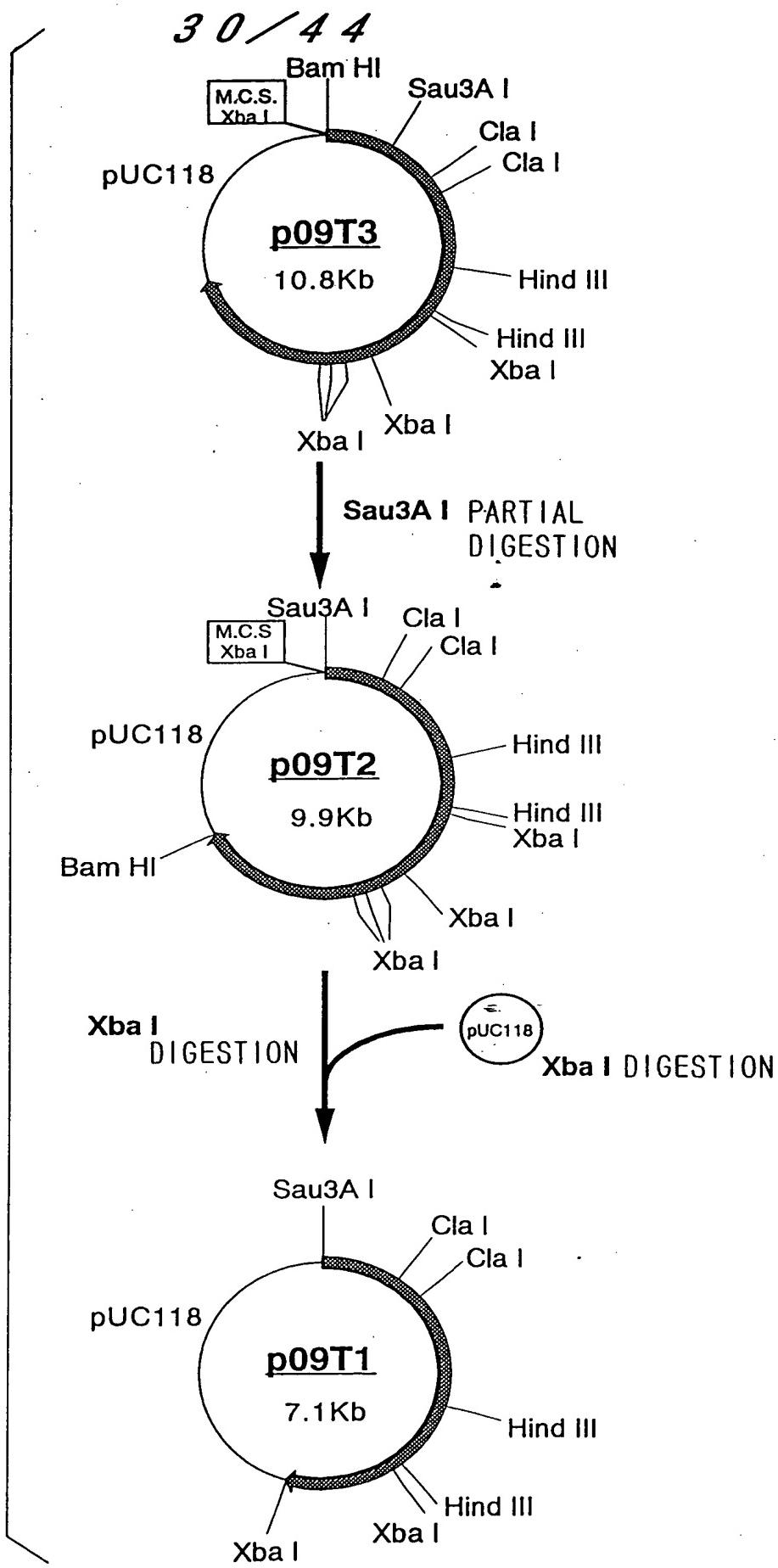
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p09T1 INSERTED FRAGMENT



F | G. 29

FIG. 30



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1' MASPGSNHGYDVIDHSRIND  
\*\*\*\*\*  
1" MIIGTYRLQLNKKFTFYDIIENLDYFKELGVSHLYLSPILKARPGSTHGYDVVDHSEINE  
21' ELGGEKEYRRLIETAHTIGLGIQDIVPNHAMAVNSLNWRLMDVLKMGGKSKEYTYFDFFF  
\*\*\*\*\*  
61" ELGGEEGCFKLVKEAKSRGLEIIQDIVPNHAMAVHHTNWRLMDLLKSWNSKYYNYFDHY-  
81' EDDKIRLPILGEDLDTVISKGLLKIVKDGDEY-----FLEYFKWLPLTE---VG  
\*\*\*\*\*  
120" DDDKILPILEDELDTVIDKGLIKLQKDNEYRGLILPINDEGVEFLKRINCFCNSCLKK  
128' NDIDYDTLQKQNYTLMSWKNP-PSYRRFFDVNTLIGVNVEKDHFQESHSKILDLDVDGYR  
\*\* . \*  
180" EDIKKLLLIIQYYQLTYWKKGYPNYRRFFAVNDLIAVRVELDEVFRESHETIAKLPVDGLR  
187' IDHIDGLYDPEKYINDRSII-KNKIIIIVEKILGFQEELK--LNSDGTGYDFLNYSNLL  
\*\*\*\*\*  
240" IDHIDGLYNPKEYLDKLRQLVGNNDKIIYVEKILSINEKL RDDWKVDGTTGYDFLNVNML  
244' F--NFNQEIMDSIYENFTAEKISISESIKKIKAQIIDELFSYEVKRLASQLGISYDILRD  
\*\*\*\*\*  
300" LVDGSGEELTKFYENFIGRKINIDEELIQSKKLVANQLFKGDIERLSKLLNVNYDYLVD  
302' YLSCIDVYRTYANQIVKECDKTNEIEEATK-RNPEAYTQLQQYMPAVYAKAYEDTFLFRY  
\*\*\*\*\*  
360" FLACMKKYRTY--LPYEDINGIRECDKEGKLKDEKGIMRLQQYMPAIFAKGYEDTTLFIY  
361' NRLISINEVSDLRYYKISPQDFHVFNQKRRGKITLNATSTHDTKFSEDVRMKISVLSEF  
\*\*\*\*\*  
418" NRLISLNEVSDLRRFSLSIKDFHNFNLSRVNTISMNTLSTHDTKFSEDVRARISVLSEI  
421' PEEWKNKVEEWSIINPKVSRNDEYRYYQVLVGSFYEGFSNDFKERIKQHMIKSVREAKI  
\*\*\*\*\*  
478" PKEWEERVIYWHDLLRPNIKDKNDEYRFYQTLVGS-YEGF--DNKERIKNHMIKVIREAKV  
481' NTSWRNQNKEYENRVMELVEETFTNKDFIKSFMKFESKIRRIGMIKSLSLVALKIMSAGI  
\*\*\*\*\*  
535" HTTWENPNIEYEKKVLFIDEVFENSFRNDFENFEKKIVYFGYMKS LIATTLRFLSPGV  
541' PDFYQGTEIWRYLLTDPDNRVPVDFKKLHEILEKSKFEKNMLESMDGRIKMYLTYKLL  
\*\*\*\*\*  
595" PDIYQGTEWRFLLTDPDNRMPPVDFKKLPELL--NNLTEKNLE-LSDPRVKMLYVKKLL  
601' SLRKQLAEDFLKGEYKGLDLEEGLCGFIRFNKILVIIKTKGSVNYKLKLEEGAIYTDVLT  
\*\*\*\*\*  
651" QLRR---EYSLNDYKPLPF----GFQR-GKVAVLFSPIVTREVKEKISIRQKSVDWIR  
661' GEEIKK-EVQINELPRILVRM  
\*\*\*\*\*  
701" NEEISSGEYNLSELIGKHVVILTEKRE

F | G. 31

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816' ATGGCTTCGCCAGGAAGTA-ACCATGGGTACGATGTAA  
455" AAGGCTAGACCAGGGAGCACTCACGGCTACG--ATGAGTAGATCAT-AGTCAAATTAAAT  
853' TAGATCATTCAAGGATAAACGATGAAC-TTGGAGGAG--AGAAAAGAATAACAGGAAGTTA  
512" GAGGAATTAGGAGGAGAAGAGGGGTGCTTAAACTAGTTAAGGAAGCTAAGAGTAGAGGT  
909' ATAGAGACAGCTCATACTATTGGATTAGGTATTAT-ACAGGACATAGTACCAAAT-CACA  
572" TTAGAAATCATACAAGATATAGTGCCTAAACTACATGGCGGTACATCATACTAATTGGAGA  
967' TGGCTGAAATTCTCTA-AATTGG-CGACTAATGGATGTATTAAAAATGGTAAAAAGAG  
632" CTTATGGATCTGTTAAAGAGTTGAAGAATAGTAAACTACTATAACTATT-TTGATCACTA  
1025' TAAATATTATACGTACTTTGACTTTCCCAGAAGATGA-TAAGATACGATTACCCATAT  
691" CGATGATGACAAGATAATCCTCCCAACTTGAGGACGAGTTGGATACCGTT--ATAGAT  
1084' TAGGAGAAGATTTAGATACAG--TGATAAGTAAAGGTTATTAAAGATAGTAAAAGATGG  
749" AAGGGATTGATAAAACTACAGAAGGATAATATAGATCAGAG-AGGGCTTATATTACCTAT  
1142' AGATGAATATTCCTAGAATATTCAAATGGA--AACT--TCCTCTAACAGAGGTTGGAA  
808" AAATGATGAAGGAGTTGAATTCTGAAAAGGATTAATTGCTTGTAAATTATGTTAA  
1198' ----ATGATATATACGACACTTACAAAAACAGAATTATACCTTAATGTCTTGGAA--  
868" GAAAGAGGATATAAGAAATTACTATTAAATACAAATTATCAGCTAACTTACTGGAAAGAA  
1250' AAATCCTCTAGCTATAGCATTCTGATGTTAATACTTAATAGGAGTAAATGTCGA  
928" AGGTTATCCAAACTATAGGAGATTTTCGAGTAAATGATTGATAGCTGTTAGGGTGA  
1310' AAAAGATCACGTATTCAGAAGTCCCATTCAAAGATCTTAGATTAGTGTGATGGCTA  
988" ATTGGATGAAGTATTTAGAGTCCCAGATAATTGCTAAGCTACCAAGTTGACGGTT  
1370' TAGAATTGATCATATTGATGGATTATGATCTGAGAAATATTAATGACCT--GA-G  
1048" AAGAATTGACCACATAGATGGACTATATAACCCCTAAGGAGTATTTAGATAAGCTAAGACA  
1427' GTCAATAATTAAAATAATTATTGTAGAAAAAATTCTGGATTTCAGGAGAATT  
1108" GTTAGTAGGAAATGATAAGATAATACGTAGAGAAGATATTGCTAATCAACGAGAAATT  
1487' AA-----AATTAAATTCAAGATGAACTACAGGATATGACTTCTAAATTACTCCAACCT  
1168" AAGAGATGATTGAAAGTAGATGGACTACTGGATATGATTCTGAACTACGTTAATAT  
1541' ACTGTT--TA-ATTTAATCAAGA-GA-TAATGGAC-AGTATATATGAGAATTTCACAGC  
1228" GCTATTAGTAGTGGAACTGGTGGAGGAGGTTAAGTTATGAGAATTTCATTGG  
1595' GGAGAAAATATCTATAAGTGAAGTATAAAGAAAATAAAAGCGCAAATAATTGATGAGCT  
1288" AAGGAAAATCAATATAGACGAGTTAATACAAAGTAAAAAATTAGTTGCAAATCAGTT  
1655' ATTTAGTTATGAGTTAAAGATTAGCATCACAACTAGGAATTAGCTACGATATTGAG  
1348" ATTTAAAGGTGACATTGAAAGATTAAGCAAGTTACTGAACGTTAATTACGAT-TATTTAG  
1715' -AGATTACCTTCTGTATAGATGTGTACAGAACTTATGCTAATCAGAT-TGTAAAAGAG  
1407" TAGATTTCTAGCATGTGAAAAAATACAGGACTTAT--TTACCATATGAGGATATTAA

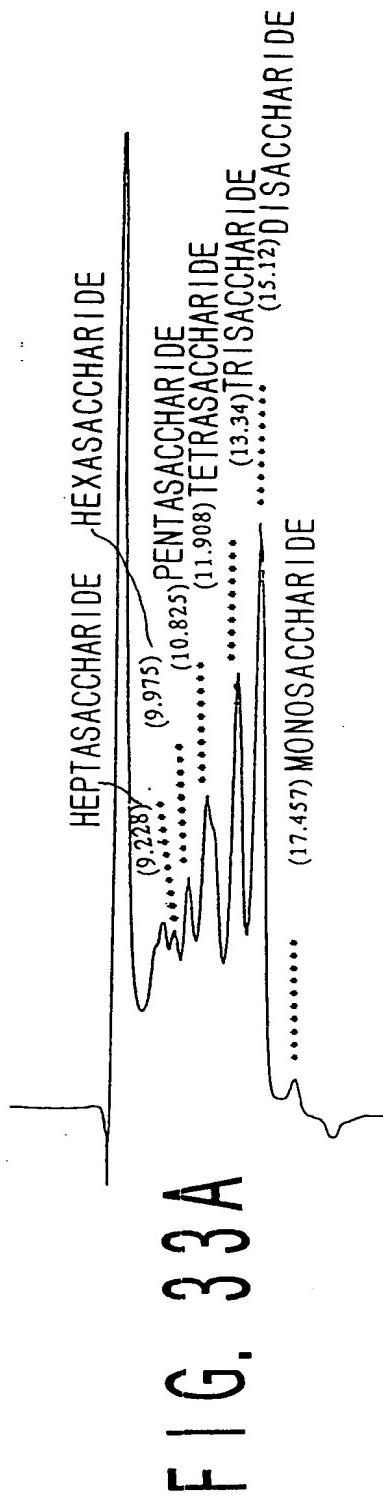
F I G. 32A

*33/44*

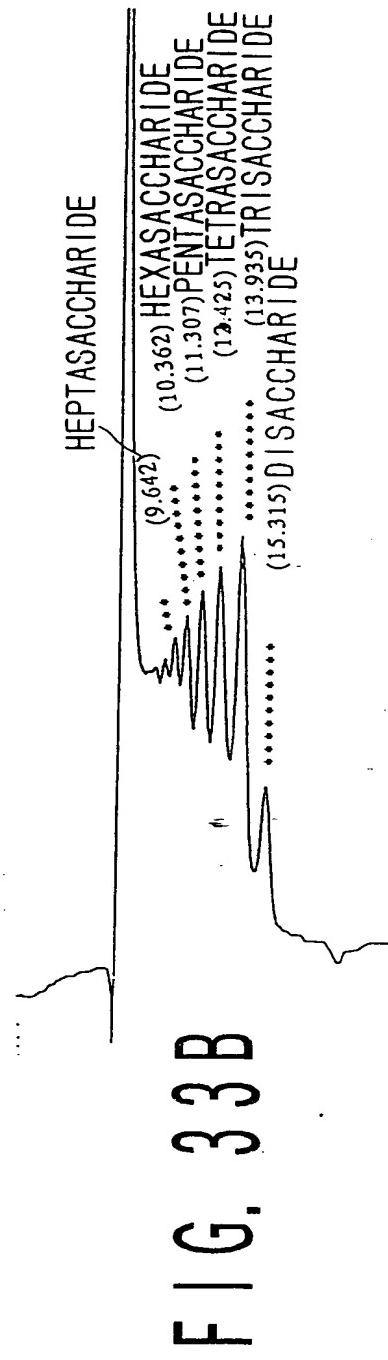
1773' TGTGATAAGACCAATGAGATAAGGAAGCAACAAAAGAAATCCAGAGGCTTATACTAAA  
 1465" CGGAATAAG-GGAATGCGATA-AGGAGGGAAAGTTAAAGATGAAAAGGAATCATGAGA  
 1833' TTACAACAATAATGCCAGCAGTACGCTAACAGCTTGAAGATACTTCTCTTAA  
 1523" CTCCAACAATACATGCCAGCAATCTCGCTAAGGGCTATGAGGATACTACCCCTTCATC  
 1893' TACAATAGATTAAATATCCATAAATGAGGTTGGAAGCGATTTACGATATTATAAGATATCG  
 1583" TACAATAGATTAAATTCCTTAACGAGGTTGGAGCGACCTAAGA-AGATTCAAGTTAAAG  
 1953' CCT-GATCAGTTCATGTATTAATCAAAAACGAAGAGGAAAATCACACTAAATGCCAC  
 1642" CATCAAAGACTTCATAACTTTAACCTAACAGAGATAACCATATCAATGAACACTCT  
 2012' TAGCACACATGATACTAAGTTAGTGAAGATGTAAGGATGAAAATAAGTGTATTAAAGTGA  
 1702" TTCCACTCATGATACTAAATTCACTGAAGACGTTAGAGCTAGAATATCAGTACTATCTGA  
 2072' ATTCCTGAAGAATGGAAAATAAGTCAGGAATGGCATAGTATCATAATCCAAAGGT  
 1762" GATACCAAAGGAGTGGGAGGAAGGGTAATATACTGGCATGTTGTTAAGGCCAATAT  
 2132' ATCAAGAAATGATGAATATAGATATTACAGGTTTAGTGGGAAGTTTATGAGGGATT  
 1822" TGATAAAAACGATGAGTATAGATTITATCAAACACTGTGGGAAG---TTACGAGGGATT  
 2192' CTCTAATGATTTAAGGAGAGAATAAGCAACATATGATAAAAAGTGTCAAGAGCTAA  
 1879" ---T--GATAATAAGGAGAGAATTAAGAACCATGATTAAGGTATAAGAGCTAA  
 2252' GATAAATACCTCATGGGAAAATCAAATAAAGAATATGAAAATAGAGTAATGGAATTAGT  
 1933" GGTACATACAACGTGGAAAATCTTAATATAGAGTATGAAAAGAAGGTTCTGGTTTCA  
 2312' GGAAGAAACTTTACCAATAAGGATTTCATTAAAGTTTACGAAATTGAAAGTAAGAT  
 1993" AGATGAAGTGTGAGAACAGTAATTAGAAATGTTGAAATTTGAAAATTGAAAAGAAAAT  
 2372' AAGAAGGATAGGGATGATTAAGAGCTTATCCTTGGTCGCTTAAAGTTATGTCAGCCGG  
 2053" AGTTTATTCGGTTATGAAATCTTAATCGCAACGACACTTAGTTCTTCGCCCCGG  
 2432' TATACCTGATTTTATCAGGGACAGAAAATGGCGATTTACTTACAGATCCAGATAA  
 2113" TGTACAGATTTATCAAGGAACGTGAAAGTTGGAGATTCTTACAGACCCAGATAA  
 2492' CAGAGTCCCAGTGGATTTAAGAAATTACACGAAATATTAGAAAAATCCAAAAAATTG  
 2173" CAGAATGCCGGTGATTCAAGAAACTAAAGGAATTATTAATAATTGACTGAAAAGAA  
 2552' AAAAATATGTTAGAGTCTATGGAC--GATGGAAGA-ATTAAGATGTATTAAACATATAA  
 2233" CTTAGAACTCTCAGATCCAAGAGTCAAATGTTATGTTAAGAAAT-TGCTACAGCTT  
 2609' GCTTTATCCCTAAGAAAAGCTGGCTGAGGATTTAAAGGGCAGTATAAGGG---  
 2292" GAAGAGAGTACTCACTAACGATT--ATAAACCATGCCCTTGGCTTCCAAAGGGAAA  
 2656' ATTAGATCTAGAAGAAGGACTATGTTGGTTA-TTAGGTTAACAAAATTGGTAATAA  
 2350" AGTAGCTGTCCTTCTACCAATAGTACTAGGGAGTTAAAGAGAAAATTAGT-ATAA  
 2725' TAAAAACCAAGGAAAGTGTAAATTACAAACTGAAACCTGAAAGAGGGAGCAATTACACAG  
 2409" GGCAAA-AAAGCGTTGATTGGATCAGAAATGAGGAAATTAGTAGTGGAGAAT---ACAA  
 2785' ATGTATTGACAGGAGAAAGAAAATAAAAAGAGGTACAGATTAATGAGCTACCTAGGATAC  
 2464" TTTAAGTGTGAGTTGATTGGGAGCATAAAGTCGTTATA-TTAACGTAAAAAGGGAG

F | G. 32B

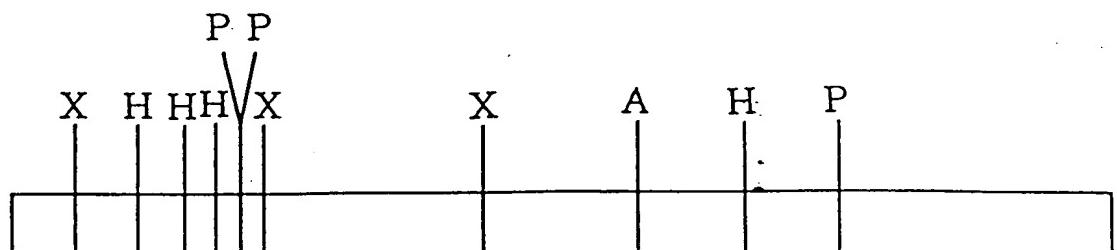
IN THE PRESENCE OF THE ENZYME



CONTROL



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pKA2

A : A c c I  
H : H i n c I I  
P : P s t I  
X : X b a I

F | G. 34

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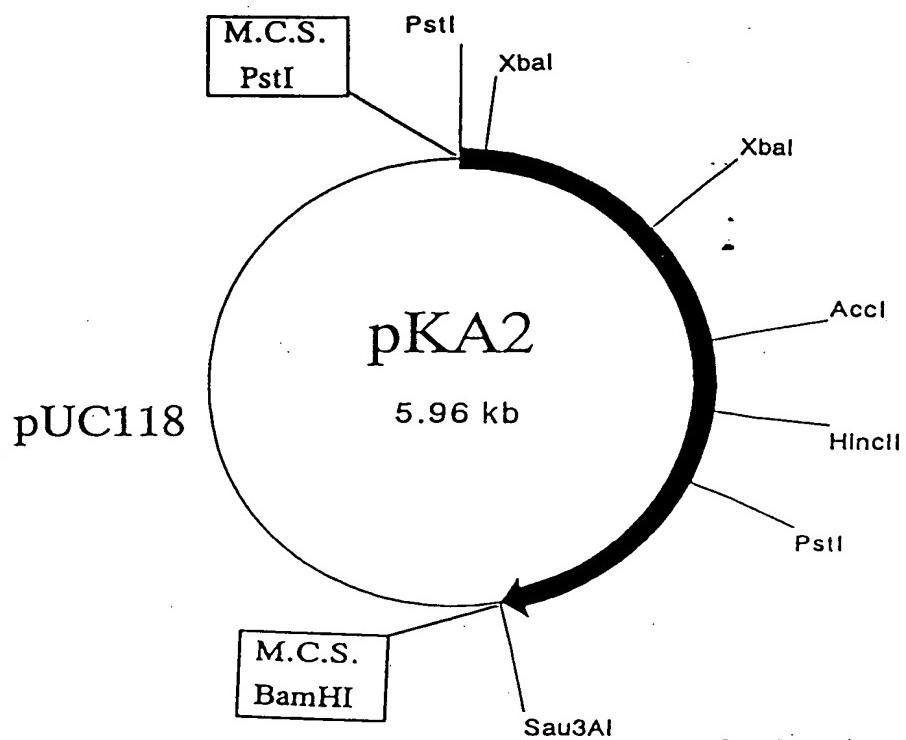


FIG. 35

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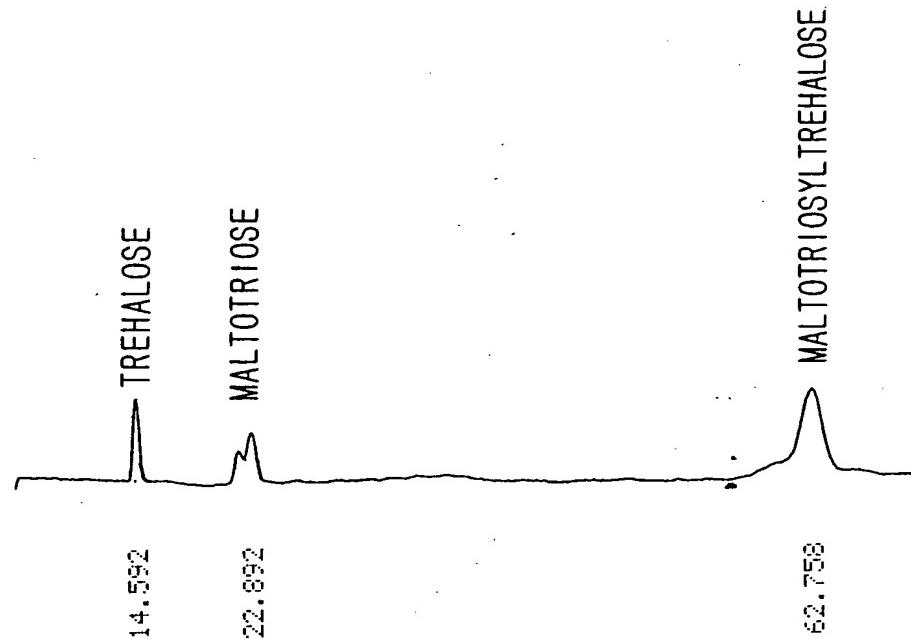


FIG. 36 A

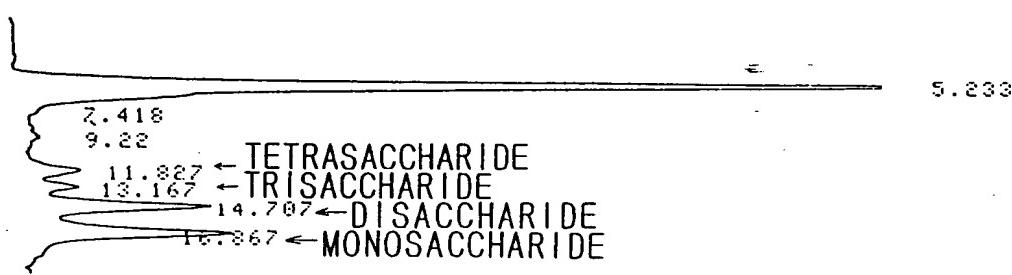
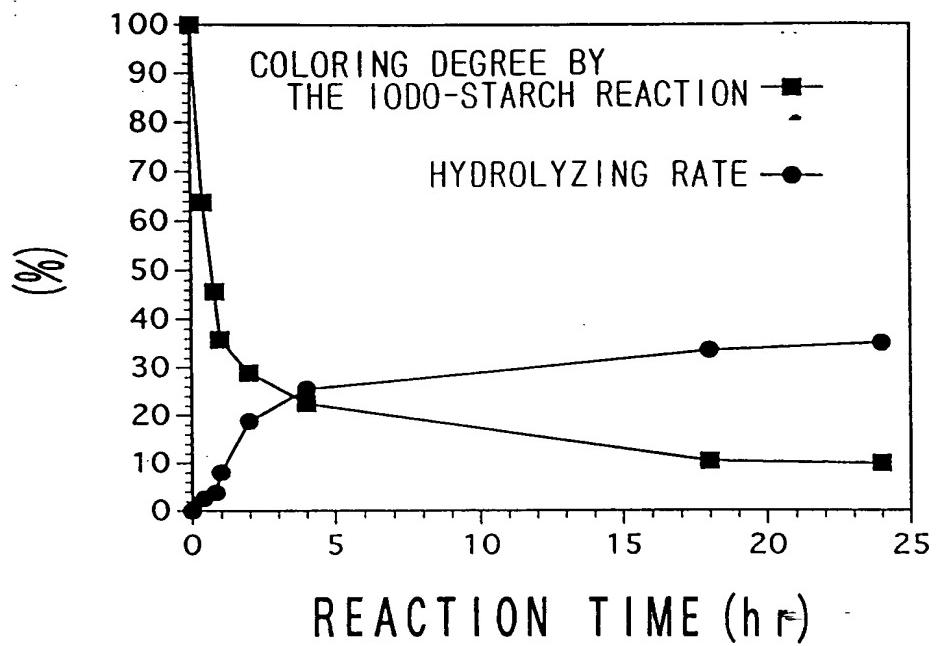


FIG. 36 B

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F | G. 37

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p09A1 INSERTED FRAGMENT

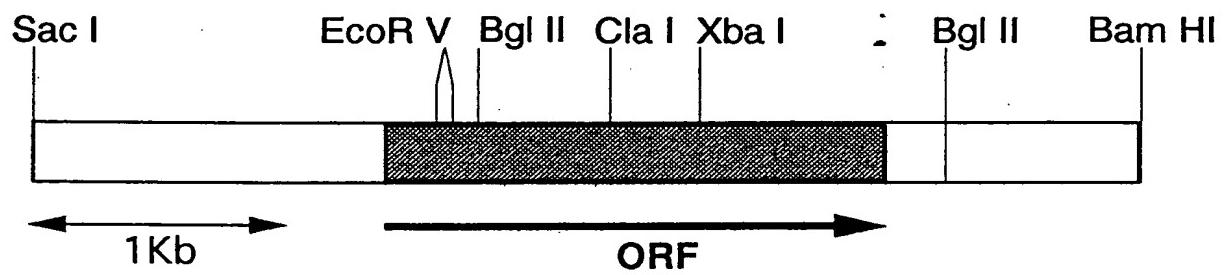
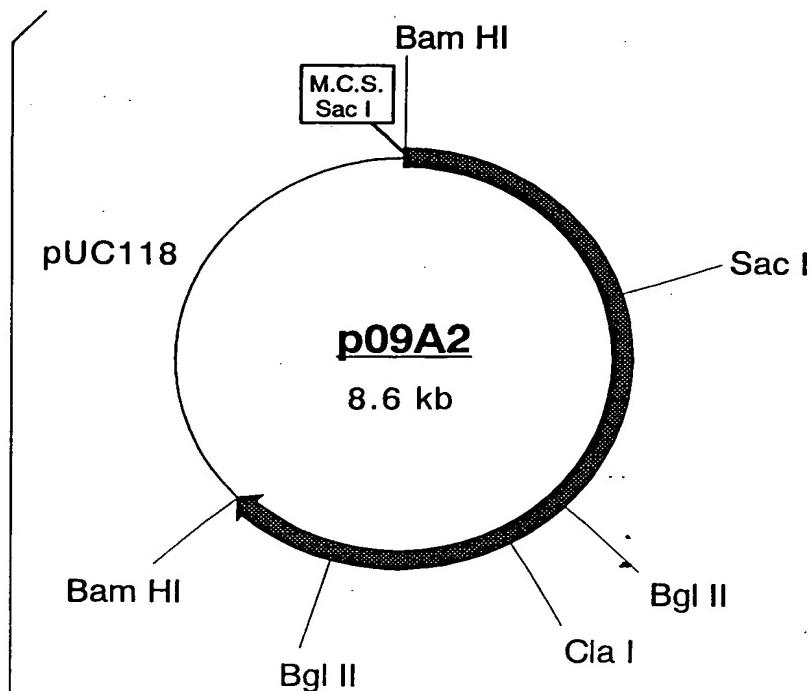
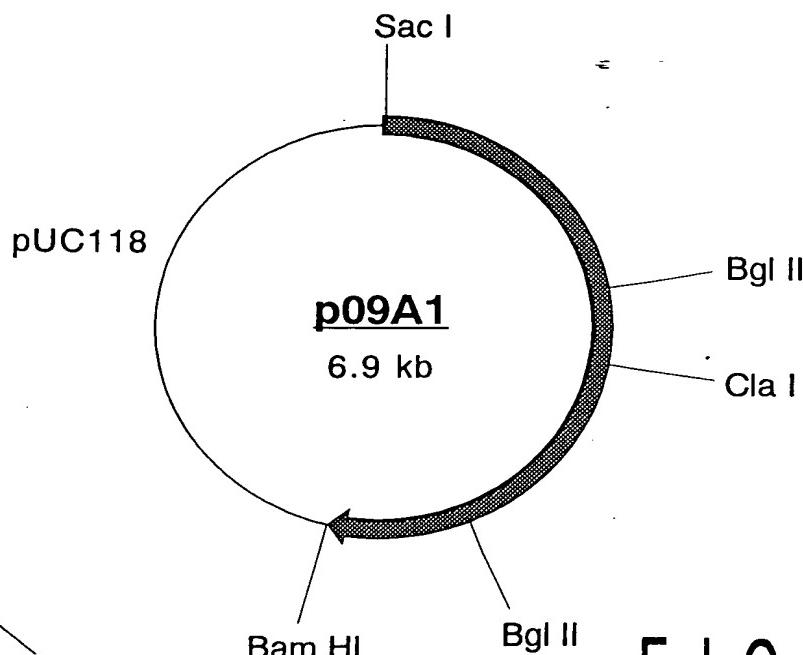


FIG. 38

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Sac I DIGESTION



F | G. 39

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1' MFSFGGNIEKNKGIFKLWAPYVNSVKLK-LSKKLIPMEKNDEGFFEVEIDDIEENLTYSY  
1" TFAYKIDGNEVIFTLWAPYQKSVKLKVLKGLYEMERDEKGYFTITLN NVKVRDRYKY  
60' IIEDKREIPDPASRYQPLGVHDKSQLIRTDYQILDLGKVKIEDLIIYELHVGTFSQEGNF  
59" VLDDASEIPDPASRYQPEGVHGSPQIIQESKEFNNETFLKKEDLIIYEIHVGTFPEGTF  
120' KGVIEKLDYLKDLGITGIELMPVAQFPGRDGYDGFLYAVQNTYGGPWEALKVNEAH  
119" EGVIRKLDYLKDLGITIAIEIMPIAQFPGRDGYDGFLYAVQNSYGGPEGFRKLVDEAH  
180' KRGIAVILDVVYNHIGPEGNYLLGLGPYFSDRYKTPWGLTFNFDDRGCQVRKFILENVE  
179" KKGLGVILDVVYNHVGPEGNYMVKLGPYFSQKYKTPWGLTFNFDDAESDEVRKFILENVE  
240' YWFKTFKIDGLRLDAVHAIFDNSPKHLQEAKEAHQLGKFVIAESDLNDPKIV--KDDC  
239" YWIKEYNDGFRLDAVHAIIDTSPKHILEEIADVVHKYNRIVIAESDLNDPRVNPKEKC  
298' GYKIDAQWVDDFHHAHVAFITKEKDYYQDFGRIEDIEKTFKDVFVYDGKYSRYGRTHG  
299" GYNIDAQWVDDFHHSIHAYLTGERQYYTDFGNLDDIVKSYKDVFVYDGKYSNFRRKTHG  
358' APVGDLPPRKFVVFIQNHDQVGNRGNGERLSILTDKTTYLMATLYILSPYIPLIFMGEE  
359" EPVGELDGCNFVYIQNHDQVGNRGKGERIIKLVDRSYKIAAALYLLSPYIPMIFMGEE  
418' YYETNPFFFFSDFSDPVLIKGVRERLKENNQMIDPQSEEFLKSLSWKIDEEVLDYYK  
419" YGEENPFYFFSDFSDSLQGVREGRKKENGQDTDPQDESTFNASKLSWKIDEEIFSFYK  
478' QLINIRKRYN-NCKRVKEVRREGNCITLIMEKIGIIASFDDIVNSKITGNLLIGI--GF  
479" ILIKMRKELSIACDRRVNVVNGENWLIIKGREYFSLYVFSKSSIEVKYSGTLLLSSNSF  
535' PKKLKKDELIKVNRGVGVYQLE  
539" PQHIEEGK-YEFDKGFALYKL

FIG. 40

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1176' ATGTTTCGTTCGGTGAAATATTGAAAAAATAAGGTATCTTAAGTTATGGCACCT  
642" ACGTTTGCTTATAAAATAGTGGAAATGAGGTAATCTTACCTTATGGCACCT  
1236' TATGTTAATAGTGTAAAGCTGAA-GTT--AAGCAAAAACCTTATTCCAATGGAAAAAAC  
696" TATCAAAAGAGCGTTAAACTAAAGGTTCTAGAGAAGGGACTTACGAAATGGAAAGAGAT  
1293' GATGAGGGATTTTCGAAGTAGAAATAGACGATATCGAGGAAAATTAAACCTTATTCTTAT  
756" GAAAAAGGTTACTTCACCATTACCTTAAACAACGTAAGGTTAGAGATAGGTATAAATAC  
1353' ATTATAGAAAGATAAGAGAGAGATACTGATCCCGCATCACGATATCAACCTTAGGAGTT  
816" GTTTAGATGATGCTAGTGAATACAGATCCAGATCCAGATACCAACCAAGGTGTA  
1413' CATGACAATCACAACCTTATAAGAACAGATTATCAGATTCTGACCTTGGAAAAGTAAAA  
876" CATGGGCCTTCACAAATTATACAAGAAAGTAAAGAGTTCAACACGAGACTTTCTGAAG  
1473' ATAGAAGATCTAATAATATGAACCTCCACGTTGACTTTTCCAAAGAGGAATTTC  
936" AAAGAGGACTTGATAATTATGAAATACACGTGGGGACTTTCACTCCAGAGGGAACGTT  
1533' AAAGGAGTAATAGAAAAGTTAGATTACCTCAAGGATCTAGGAATCA CAG6AATTGAAC  
996" GAGGGAGTGATAAGGAAACTTGACTACTAAAGGATTGGAAATTACGGCAATAGAGATA  
1593 ATGCCTGTGGCACAATTTCAGGGAATAGAGATTGGGATACGATGGTCTTCTATAC  
1056" ATGCCAATAGCTCAATTCTGGAAAGGGATTGGGTTATGATGGAGTTTATTTATAT  
1653' GCAGTTCAAATACTTATGGCGGACCATGGGAATTGGCTAAGCTAGTAAACGAGGCACAT  
1116" GCAGTACAGAACTCTACGGAGGGCAGAAGGTTTAGAAAGTTAGTTGATGAAGCGCAC  
1713' AAAAGGGGAATGCCGTAAATTGGATGTTGATATAATCATATAGGCTGAGGGAAAT  
1176" AAGAAAGGTTAGGAGTTATTAGACGTAGTATACAACCAACGTTGGACCAGAGGGAAAC  
1773' TACCTTTAGGATTAGGTCTTATTTCAGACAGATATAAAACTCCATGGGGATTAACA  
1236" TATATGGTTAAATTGGGCCATATTCTCACAGAAATACAAAACGCCATGGGATTAACC  
1833' TTAAATTGGATGATAGGGGATGTGATCAAGTTAGAAAATTCAATTAGAAAATGTCAG  
1296" TTAACTTTGACGATGCTGAAAGCGATGAGGTTAGGAAGTTCATCTAGAAAACGTTGAG  
1893' TATTGGTTAAAGACCTTAAATCGATGGTCTGAGACTGGATGCAGTTATGCAATT  
1356" TACTGGATTAAGGAATATAACGTTGATGGGTTAGATTAGATGCGGTTATGCAATTATT  
1953' GATAATTGCCCTAAGCATATCCTCCAAGAGATAGCTGAAAAGCCCATCAATTAGAAAA  
1416" GACACTTCTCTAAGCACATCTGGAGGAATAGCTGACGTTGTGCATAAGTATAATAGG  
2013' TTGTTATTGCTGAAAGTGTAAATGATCCAAAATAG-TAA----AAGATGATTGT  
1476" ATTGTCATAGCCGAAAGTGTAAACGATCCTAGAGTCGTTATCCAAAGGAAAAGTGT  
2067' GGATATAAAATAGATGCTCAATGGGTTGACGATTCCACCAACGCACTGATTGATTG  
1536" GGATATAATATTGATGCTCAATGGGTTGACGATTCCATCATTCTATTACGCTTACTTA  
2127' ACAAAAGAAAAAGATTATTACCAAGGATTTGGAGGATAGAGATAAGAGAAACT  
1596" ACTGGTGAGAGGAAGGCTATTACGGATTGCTAACCTTGACGATATAGTTAAATCG

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2187' TTTAAAGATGTTTTGTTTATGATGGAAAGTATTCTAGATAACAGAGGAAGAACATGGT  
\*  
1656" TATAAGGACGTTTCGTATATGATGGTAAGTACTCCAATTTAGAAGAAAAACTCACGGA  
2247' GCTCCTGAGGTGATCTTCCACCACGTAATTTGAGTCTTCATACAAAATCACGATCAA  
\*  
1716" GAACCAGTTGGTGAACTAGACGGATGCAATTCTAGTTATATACAAAATCACGATCAA  
2307' GTAGGAAATAGAGGAAATGGGAAAGACTTCCATATTAACCGATAAAACGACATACCTT  
\*  
1776" GTCGGAATAGAGGCAAGGTGAAAGAATAATTAAATTAGTCGATAGGGAAAGCTACAAG  
2367' ATGGCAGCCACACTATATACCTCACCGTATATACCGCTAATATTTATGGGAGGAA  
\*  
1836" ATCGCTGCAGCCCTTACCTTCTTCCCCCTATATTCAATGATTTCATGGAGAGGAA  
2427' TATTATGAGACGAATCCTTTTCTTCTTCTGATTTCTCAGATCCGTATTAATTAAG  
\*  
1896" TACGGTGAGGAAAATCCCTTTATTTCTTCTGATTTCTCAGATTCAAACGTGATACAA  
2487' GGTGTTAGAGAAGGTAGACTAAAGAAAATAATCAAATGATAGATCCACAATCTGAGGAA  
\*  
1956" GGTGTAAGGGAGGGAGAAAAAGGAAAACGGGCAAGATACTGACCCCTCAAGATGAATCA  
2547' GCGTTCTTAAAGAGT--AAACTTTCATGGAAAATTGATGAGGAAGTTTAGATTATTATA  
\*  
2016" AC--TTTTAACGCTTCCAAACTGAGTTGGAGATTGACGAGGAAATCTTTCATTTACA  
2605' AACAACTGATAAATATCAGAAA-GAGAT-ATAATA-ATTGAAAAGGTAAAGGAAGTTA  
\*  
2074" AGATTTAATAAAAATGAGAAAGGAGTTGAGCATAGCGTGTGATAGGAGAGTAAACGTCG  
2662' GGAGAGAAGGAACTGTATTACTTGTATGATGGAAAAAATAGGAATAATTGATCGTTG  
\*  
2134" TGAATGGCGAAAATTGGTTGATCATCAAGG-GAAGAGAATACTTTCACTCTACGTTTC  
2722' ATGATATTGT-AATTATTCTAAAATTACAGGTAAATTACTTATAGGCATAGGATTCCG  
\*  
2193" TCTAAATCATATTGAAGTTAAGTACAGTGGACTTTACTTTGTCTCAAATAATTCA  
2781' AAAAAATTGAAAAAGATGAA--TTAAT-TAAGGTTAACAGAGGTGTTGGGTATATCAA  
\*  
2253" TTCCCTCAGCATATTGAAGAAGGAAATATGAGTTGATAAGGGATTGCTTTATATAAA  
2838' TTGAA  
\*  
2313" CTT

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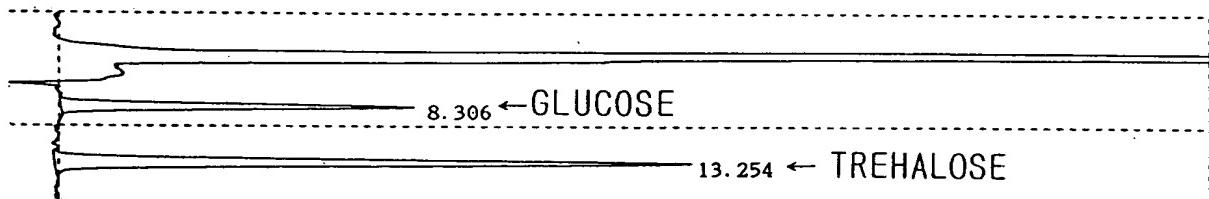


FIG. 42